

Railway Age

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Table of Contents Appears on
Page 5 of Advertising Section

California Grape Plan Successful

THAT the grape plan formulated by the Pacific Coast Transportation Advisory Board and the Car Service Division of the American Railway Association to facilitate the handling of California grapes has been effective in the movement of this year's crop is shown by the absence of peak shipments. Last year the peak occurred on September 24 when 1,621 cars were shipped, while this year the largest single day's shipment fell short of this amount, being 1,358 cars on September 9. Last year the four largest single days' shipments were 1,621, 1,571, 1,503 and 1,502 cars, while this year the four largest were 1,358, 1,355, 1,341 and 1,325. The total shipments this year have been somewhat less than last year due to the early maturing of the crops at a time when there was no market, as a result of which much of the crop was dried and held for shipment later. In spite of this fact, the more uniform movement this year reflects the success of the plan. Shipments were regulated through the ordering of cars in advance and this practice eliminated large shipments on any one day. Another evidence of the success of the plan lies in the fact that while the movement of the grape crop from July 1 to September 24 occurred at the time heavy shipments of other fresh fruits and vegetables were being handled, there was no evidence of a car shortage in spite of the fact that not more than 72 per cent of the refrigerator cars of the railroads of the United States were released within the free time period, while the average for this period was 70 per cent as compared with an average of 72 per cent for the whole of 1925.

The Fight on Company Unions

THE American Federation of Labor has quite frankly started a hard fight to drive out the so-called company unions in this country and a special effort will undoubtedly be concentrated on the railway shop crafts organizations. The mechanical departments of the railways were forced into the company unions as a result of the strike of 1922. As quickly as possible, they worked out plans, based in most cases upon the principles of employee representation, for adjusting differences with the shop crafts and developing a maximum degree of co-operation in the interest of both parties. Not all of the roads have gone at the problem in the same way. Where the ideals and principles of employee representation are clearly understood and followed, there need be little fear of attack from the outside. The greatest enemy to the company unions is on the inside and is due either to a failure on the part of those in charge to understand the principles on which successful schemes of employee representation have been built, or to the fact that some of the foremen and supervisors have failed to catch its spirit and observe some of the fundamental requirements. The A. F. L. has made no secret of its intention. It therefore behooves

such railways as are concerned thoroughly to check up and survey their applications of employee representation and make sure that sound practices and fundamental principles are being religiously adhered to.

A Deficient Practice Brought to Light

THE occurrence of several accidents of late in which improper flagging by maintenance-of-way employees was a contributing, if not the primary factor calls attention to the importance of proper instruction of employees on whom this duty devolves. In one recent instance in which a section laborer had been sent out to protect the work of removing a rail, the man picked up his torpedoes and flag and came in in error in response to a distant hand signal which he interpreted as calling him in, with the result that a fast passenger train was derailed, killing two employees and injuring three other persons. In another instance, a flagman sent out to protect rail-laying operations placed a torpedo of which the clamps had been broken off on the rail with the result that it was displaced and not exploded by a passing train which ran into the open track, killing two employees and injuring one. In this instance, it was developed further that the use of hand flags and fuses were not required. Such practices would not be tolerated among train service employees, yet their responsibility is no greater than that of maintenance flagmen. The conditions under which much maintenance-of-way work must be done, as well as the emergencies that arise from time to time, make flagging a duty of maximum responsibility for maintenance employees. The accidents that have occurred of late reveal shortcomings in current practices on several roads which should cause the maintenance-of-way officers of all roads to review their instructions and ascertain the extent to which they are understood and followed in full by the employees.

Cleanliness Prompts Cleanliness

A STRIKING example of the psychological effect of surroundings on the man was recently observed in a large engine terminal of one of the eastern roads, where one of a party of men directly retraced his steps to pick up a cigarette butt which he had carelessly thrown to the ground. As trivial a matter as this might have been at most terminals, so apparent was the offense here that it instantly brought forth an apology. Nowhere in sight was a blemish on the terminal grounds, not a scrap of paper, a lump of coal, a piece of scrap or an idle tool. This condition was unavoidably noticeable and inadvertently provoked considerable comment. One unskilled, yet loyal employee, plus the co-operation of the terminal forces maintained the grounds in this condition. The policy of "Clean up and keep clean" had long since

made its impression and whereas, under other conditions, a single cigarette butt would have been lost in the debris, here it stood out offensively against a clean background. The same force acting to see that it was removed in this case has to a large extent been responsible for maintaining the spotless condition of many places once established by a good initial cleaning and a little education.

What Are They?

RAILROADS at the present time are operating at a capacity sufficiently high that a warning has been given of a possible car shortage. On the other hand, on October 1, 4,680 locomotives were reported by the Car Service division as stored in serviceable condition. This represented 7.5 per cent of the number of locomotives on line. What per cent of the actual productive capacity do they represent? Is it probable that any large proportion of them will ever see service again? These questions are all subjects of considerable conjecture, and while answers to them may not be of vital importance, they would assist in little clearer thinking with respect to the question of aggregate locomotive capacity. These locomotives are obviously not in service and neither are they definitely in or awaiting shop. Are not many of them awaiting authority for retirement?

A Thought on Combustion

THE railroads are now studying combustion more generally and intensively than ever before in an attempt to save fuel. A correct knowledge of fundamentals is essential and a mechanical department head contributes the following thought on the subject: "The idea of space as a factor in combustion often becomes more dominant than that of time and persists even when a man studying the subject extends his investigation into the practical field. The ordinary man, at his fireside, realizes (in most cases without reasoning it out) that in spite of an ample air supply, combustion is quickly checked by the formation of an envelope of burning gas and inherent ash and that fresh surface must be constantly presented to the oxygen of the air—hence his use of the poker. It is this phase of the question on a large scale which is, of course, occupying the minds of those dealing with pulverized fuel; but I think it answers in part the present tendency to restrict air supply and use flat grates with small holes in them, cutting the thickness of the fuel bed approximately in half." In the past, combustion rates have undoubtedly been too high on some locomotives and while this condition has been largely remedied in modern power, there is need for still further investigation to determine the most desirable ratios between heating surface, grate area, firebox volume and rate of coal consumption.

Importance of Identifying Opposing Trains

"THERE is probably nothing more important to safe train operation on single track than absolute certainty as to the identity of opposing trains," says one of our friends in train service. "And yet," he adds, "on many roads this certainty of identity is frequently almost impossible of attainment." Engine numbers poorly illuminated, in small figures and inadequately displayed cannot be deciphered at night when

a train is in rapid motion; so, unless trains are to be slowed down for identification purposes, the best that train crews can do in many cases is to guess—and continue on their way, hoping they have guessed aright. Not long ago one train crew guessed wrong and the collision which resulted cost enough, in all probability, to have equipped all the road's locomotives with large and legible illuminated engine number indicators—and with a substantial sum left over. The situation is not the same the country over and not all railroads need study this problem seriously. However, on roads of heavy traffic with a considerable mileage of single track unprotected by automatic block signals, the question of train identity is generally one of prime importance. It is so recognized by several important railroads which, not content with adequately displaying locomotive numbers only, display train numbers as well by indicators sufficiently large and well illuminated to be easily read, even under the most adverse conditions.

Will There Be a Wider Market?

THE Illinois Central received bids on Tuesday afternoon for \$4,665,000 4½ per cent equipment trust certificates, series N. These are the certificates that the road had planned to sell to Kuhn, Loeb & Co. at 98.43. The Interstate Commerce Commission, Division 4, however, in a decision dated September 29, refused to permit their sale at that price without competitive bidding and said that if the road still thought it had to sell the certificates to Kuhn, Loeb & Co. without competitive bidding it would have to get a price of 99.517. There was a similar decision on the same day relative to the Chicago, St. Paul, Minneapolis & Omaha. Division 4 consists of Commissioners Eastman, Meyer and Woodlock. The idea of insisting on competitive bidding belongs, according to the record, to Commissioner Eastman. He first suggested the idea in a dissenting opinion in a New York Central Lines equipment trust case in May, 1925, and it is interesting to see how closely the opinion of Division 4 in the Illinois Central case follows his dissenting opinion in that case. Commissioner Eastman believes that two banking houses have too much of a monopoly of railway financing. As far as the equipment trusts are concerned, it is a fact that of the issues approved by the Interstate Commerce Commission in the first six months of 1926, Kuhn, Loeb & Co. participated in about 58 per cent and J. P. Morgan in about 28 per cent, or the two in no less than 86 per cent. What the commission hopes for is a wider distribution of railway securities. In the Western Maryland case of June 23, it said, "It seems to us that the sale of these by public competitive bidding will tend to widen their market and thus produce capital more cheaply for the issuing railroads." These securities are sold through a large number of distributing investment houses all over the country. It is understood that it has been the practice to allow about 1¾ points between the price the banker pays to the railroad and the market price, which 1¾ points include the profit for the banker and for the distributor. It is an absolute certainty based on experience that no such margin can be maintained with competitive bidding. If the margin of profits is made too small what will the distributor do? Railway securities—even equipment trust certificates—compete with many other kinds of securities and will not be handled by distributors unless there is sufficient profit to make it worth while. Is it possible to widen a market for a commodity by upsetting the distribution system or may the commission after all be slightly over-optimistic?

Manufacturing by Railways

MANUFACTURING of equipment and materials by railways for themselves is a subject of frequent discussion nowadays. If the question of its desirability is to be considered intelligently it must be considered more or less jointly by the railways and the manufacturers, and almost entirely from the standpoint of the railways. They have the power to decide as to the extent to which they will engage in manufacturing and will do so in accordance with what they believe is to their own interest. No fault can reasonably be found with this. It is the duty of their managements to do whatever they believe will be conducive to reductions in operating costs and fixed charges. Only thus can they render good service at the least practicable cost to the public while earning a reasonable net return.

The great obstacle in the way of intelligent consideration of the subject is the lack of comparable data regarding what it costs the railways to manufacture for themselves and to buy from outside companies. The outside manufacturer must pay not only for labor and materials, but also for management and selling expenses and get a reasonable profit. The railway knows what it must pay the outside manufacturer, but it seldom or never keeps its manufacturing accounts in the same way that the manufacturer does. It usually assumes that it does not have to incur the same "overhead" as the manufacturer. It is likely to be claimed that it uses an organization it would have to maintain anyway and capacity in its shops which temporarily it cannot utilize on maintenance work; that it has no selling expenses, and so on. While the railway knows what it must pay the manufacturer, the latter seldom knows what the costs actually incurred by the railroad are.

When it is claimed the railway avoids many of the expenses that the outside manufacturer must incur, the unprejudiced observer is likely to be skeptical. Those who have studied economics and accounting are not prone to believe that any kind of production can be carried on by one class of concerns without the incurring, directly or indirectly, of practically every kind of costs that have to be incurred by other concerns in carrying on the same kind of production. The economist and accountant of broad knowledge and experience are pretty sure to believe, until furnished proof to the contrary, that if two concerns or classes of concerns are producing the same thing they are incurring analogous costs all along the line, and that if one of them reports certain kinds of costs that the other does not, the difference is due to a difference in methods of accounting. The total costs of one of them per unit of product may be more in the aggregate than those of the other, but to say that one avoids large costs of several different kinds that the other must incur is flying in the face of general experience.

Governments that have engaged in commercial projects have made claims such as those sometimes made in favor of manufacturing by railways. It has been claimed for government operation of railways, the post office, etc., that the government can avoid many expenses that a private company must incur. It can borrow money at a lower rate of interest, and can "operate for service and not for profit". It has smaller selling expenses or none. It does not have to employ a large number of high-salaried executives. It can avoid expenses caused by competitive service and competitive selling.

The fallacies in these arguments often have been exposed. The saving of "overhead" by government operation has been shown to be mythical in the main. The postal department reports only its earnings and direct expenses. It includes nothing for interest on the

investment in facilities. But the government has made the investment, and therefore pays the interest just the same. There is nothing in the department's accounts to cover expenses incurred by high officers of the government and Congress in considering postal affairs; but these expenses are incurred. In Canada no charge for interest on the investment in the original government railway system—Intercolonial, National Transcontinental, etc.—appears in the accounts of the government railways. But the interest on that investment is being paid. It comes out of the pockets of the general taxpayers instead of railroad earnings. A government railway system or postal department may avoid paying the salaries of men of ability, but if so it does not get such men, and therefore does not get the benefit of services such as only they can render.

The arguments made for government management of business are themselves the best evidence that it will not be successfully conducted, because they assume that the government will not keep its accounts in the way, employ the talent and do the other things that are essential to successful management.

It cannot be denied that there is an analogy between the claims made for government management of business and those made for manufacturing by railways. The government is justified in engaging in business management to the extent that is essential to the performance of its ordinary functions. Likewise, a railway is clearly justified in engaging in manufacturing to the extent that is necessary for the performance of its ordinary functions. But a railway, like a government, should consider very carefully before going any further. A railway must employ a certain number of men and have a certain shop capacity in order adequately, economically and satisfactorily to perform its primary function of rendering transportation service. If it engages in manufacturing that requires it to employ more men, buy more materials, enlarge shop capacity, etc., it undoubtedly incurs every kind of cost, except perhaps that of selling, that is incurred by the manufacturer. Will it then assume that it can do the additional manufacturing at as low a cost per unit of product as it has done that in which it utilized only surplus capacity? If so, it will deceive itself.

There is always a strong presumption that those who devote themselves exclusively to doing a particular thing will do it better than those who do it merely as a side line. Manufacturing by railways must always be a side line. There is a presumption that concerns that have to compete for business will produce more economically than those that do not. Railways in producing transportation compete actively with each other in service and make public operating statistics comparison of which is a constant stimulus to increased efficiency. Manufacturers of equipment and supplies compete actively for the railroad market and must submit to having the quality and prices of their products compared by the purchasers. The railway which does manufacturing is not in direct competition with other manufacturers. The quality of what it produces always will be defended by its own officers, and the manufacturing costs incurred by it are not likely to be so kept and published that they can be subjected to severe analysis.

A large part of the improvements in railway equipment and devices have originated with railway officers. They usually have had to find a market for them, excepting on their own railways, through outside manufacturers. Many of the improvements in equipment and devices have originated with the outside manufacturers who, in order to secure a wide market for them, have had to incur, first, the cost of bringing them into existence, and, secondly, the selling cost of convincing the railways

that they are good things. Would progress in the development and improvement of railway equipment and supplies in the United States have been as great and rapid as it has been in the past if each railway had engaged in manufacturing on a large scale for itself? If it seems probable it would not have been, how can it be assumed that such progress would not be hindered in future by railways engaging on a large scale in manufacturing for themselves?

Directly in the interest of the railways, and indirectly in the interest of the public, the question of the desirability of manufacturing by railways needs more study than it has been given. It cannot be settled by comparing costs that are not comparable because arrived at by accounting methods that are different. It cannot be settled by comparing what it cost the railways to have equipment repairs made in outside shops in a year of such stress as 1920 with what it would have cost to have made the repairs in their railway shops in 1921, when the stress had passed and the roads had large surplus shop capacity. It cannot be settled by general considerations such as those that have been mentioned in this editorial. It can be settled only by the compilation and comparison of data that are comparable and by the consideration of business and economic tendencies and principles that have been made familiar by long and broad experience.

It would seem that railway officers and manufacturers might well "get down to brass tacks" regarding this subject by conducting joint investigations and conferences. Until they do, discussions of the subject will be comparatively fruitless.

Who Gets the "Surcharge"?

THE question of whether a law should be passed abolishing the "surcharge" on travel in sleeping and parlor cars undoubtedly will come up again when Congress meets, and apparently will be the most important railroad question considered by Congress. The agitation of it in Congress makes it a political question. Public sentiment largely determines the settlement of such questions, and therefore the public should know all the facts about it.

One argument used against the surcharge has been that much the greater part of the earnings derived from it are received by the more prosperous roads which, it is said, do not need it. The facts show this is not true.

The average return earned by all Class I roads on their property investment in 1924 was 4.23 per cent, and in 1925, 4.89 per cent. Complete statistics for all individual roads for 1925 are not yet available, but the way the surcharge is divided between the various roads on the basis of the percentages of return on property investment earned by them is indicated by the statistics for 1924.

In that year railways and railway systems earning over six per cent on their investment received less than two per cent of the total surcharge collections. Stating the matter in another way, 98.27 per cent of the surcharge collections was received by railways or railway systems earning less than six per cent. As already stated, the average return earned by all Class I roads on their property investment was 4.23 per cent. Just about one-half of the money collected was received by roads earning more than this average, and about one-half by roads earning less. Systems earning over 5 per cent net return received 29 per cent of surcharge collections, while those earning less than 5 per cent

received 71 per cent of them. Railways earning less than 4 per cent received 38 per cent of all surcharge collected.

These figures explode the claim that most of the earnings from the surcharge are received by "rich" roads that do not need them.

Never in history has Congress passed a law directly fixing railway rates. Never since the Interstate Commerce Commission was established forty years ago has Congress passed a law to set aside rates fixed by the commission. The passage of a law abolishing the surcharge would, therefore, be entirely unprecedented in the history of regulation of railways by the federal government. For Congress to pass the proposed legislation would set a dangerous precedent for political rate making and would be unjustifiable on every economic principle. The facts given above show that it would especially disregard one of the main purposes of the Transportation Act, which is to help the "weak" roads in order to enable them to render better service to the public.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,
Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Accident Bulletin No. 94, Calendar Year 1925, compiled by Bureau of Statistics, U. S. Interstate Commerce Commission. Accompanied by a circular letter explaining certain changes in reporting statistics on grade crossings, and containing more details than prior bulletins. 117 p. Pub. by Govt. Print. Off., Washington, D. C. 30 cents.

Costs of Transportation and Handling Argentine Wheat, by H. R. Brown and Brice M. Mace, Jr. U. S. Dept. of Commerce. Trade Information Bulletin No. 439. Actual costs in cents per bushel of hauling wheat to shipping points, freight rates, port charges and other expenses of handling the wheat crop. 10 p. Pub. by Govt. Print. Off., Washington, D. C., 10 cents.

Proceedings of the 18th Annual Convention of the International Railway Fuel Association, 1926. Includes committee reports, addresses, etc. 455 p. Pub. by the Association, Omaha, Neb. \$3.

Statistics of Railways of Class I—United States—(1916-1925), compiled by Bureau of Railway Economics. Its Statistical Summary No. 6, showing investment and income account, fixed charges and dividends, employees and their compensation, traffic averages, and so on with the addition of a map showing regions to which railway companies are assigned by the Bureau of Statistics, Interstate Commission. 11 sheets. Issued by Bureau of Railway Economics, Washington, D. C. Apply.

Periodical Articles

L'Action des Chemins de Fer sur la Conduite des Armées et la Durée des Guerres, by Marcel Péschaud. Comment on a book by a French officer presenting the thesis that intensive and efficient operation of railroads in wartime prolonged the war. *Revue Générale des Chemins de Fer*, October, 1926, p. 278-287.

From Redskins to Railroads, by Erna Fergusson. Social and economic changes in New Mexico brought about by the coming of railroads. *Century*, Nov. 1926, p. 23-31.

Grand Central, by Webb Waldron. The history of a terminal in New York City. *Century*, Nov., 1926, p. 41-49.

More Light!—and Power, Too, by William Z. Ripley. The third of Professor Ripley's discussions of corporate organization, reports, and practices, this time with particular reference to light and power companies. *Atlantic Monthly*, Nov., 1926, p. 667-687.

Oriental Battlepieces, by Eleanor Lattimore. Experiences of a noncombatant while traveling on railroads and with a camel caravan that are wanted by Chinese armies. *Atlantic Monthly*, Nov., 1926, p. 695-705.

Great Northern Railway Clubs



A Portion of the Glacier Park Riding Club in Action

WITH the institution of the Great Northern Railway Clubs, the first adult chapter of which was organized in November, 1923, followed successively by 14 chapters extending over the entire system, development and recreational activities have increased rapidly, embracing many forms of sport as well as social affairs and intellectual development. The outstanding result of these activities has been the unification of sentiment as expressed in loyalty to the company and co-operation of employees, caused by realization and satisfaction on the part of individual employees that their efforts are working toward the improvement and to the advantage of the railroad as well as for their personal benefit and pleasure.

The youngest club of the Great Northern, from the point of view of age of members, but the oldest in length of life, is that of the "Glacier Park Juniors," the first regular club to be organized, and composed of boys, as the name implies. It was organized in September, 1919, with but nine members. It now has a mem-

bership of nearly one hundred. By its active participation in athletics and through the publicity it has received the Glacier Park Juniors are being recognized as an important unit. In addition to material compensation in the form of improved physical ability, the boys have become imbued with the principles of teamwork, co-operation and good sportsmanship. The regular weekly luncheon is followed by a short business meeting and a program for which all available talent of the club is encouraged, including vocal and instrumental music and individual speaking.

The Great Northern Men's Club, Chapter No. 1, of St. Paul, Minn., which was organized in November, 1923, has a membership of three hundred and an average weekly attendance at noon meetings of two hundred. It makes a point of presenting speakers of notable reputation at its meetings as well as musical celebrities of high rank. It was followed by the organization of 14 successive chapters in different cities, as well as that of the Great Northern Women's Club, making at the



Great Northern Railway Band, Composed of Employees from the St. Paul Shops and General Offices

present time 17 railway clubs functioning over the Great Northern System.

The Great Northern Women's Club of St. Paul, which was organized in February, 1924, meets on alternate Thursdays at noon, and maintains an ambitious program throughout the year. It secures speakers or entertainers of national reputation as they pass through the Twin Cities, as well as prominent local men and women who are glad to appear before this group of business women who have become known in many states for their high order of intelligence and achievement.

Many ramifications of great social significance have emanated from the Great Northern clubs. Great Northern talent has been developed into groups of entertainers whose services are in constant demand locally and throughout neighboring states. First among these may be mentioned the Great Northern Male Quartette, of St. Paul, and the Ladies' Quartette, the two groups frequently singing together as an octette.

The Choral Club, numbering 60 voices, and professionally trained, has attained an enviable reputation. There are also in the ranks of entertainers, several highly skilled violinists, recitationists and singers who are in great demand.

The Dramatic Club has given several plays at local theatres, scoring a complete success with each presentation. This club also maintains classes in public speaking.

The Great Northern Band, of 45 pieces, is composed entirely of employees of the company in St. Paul.

The Great Northern orchestra, designed for chamber

music, consists of eight strings, and performs under the name of the "Oriental Limited Orchestra."

The Glacier Park Riding Club, which was instituted in October, 1925, is unique inasmuch as its members are developed from raw material, beginners' classes being maintained and instructed each week throughout the

year. The advanced membership of the club, now numbering 50 skilled equestriennes and a smaller number of esquestrians, rides regularly on Monday evenings on the road following park bridle paths and country roads in good weather, and indoors, under professional instruction during the winter months. While riding primarily with the object of developing and maintaining physical health and mental efficiency, the club enjoys many delightful social functions, picnics and breakfast rides, indoor music and fancy dress rides.

Both the men's and women's clubs have annual frolics at Christmas time, which usually resolve themselves into benefits for welfare relief while functioning ostensibly for social entertainment, the funds accruing from games, sales, etc., being used as a poor fund. One of the plans which has been successfully operated under the direction of the Women's Club, is the assignment to each of the 13 floors of the general office building of one or more needy families, whose requirements are carefully studied and provided for by the different committees. A welfare fund has also been provided by the Women's Club, which is drawn upon for care of club members who may be ill and in financial need. Al-



Great Northern Ladies' Quartette with Accompanist



The Members of the Great Northern Railway Women's Club of St. Paul, Frolic as Children at a "Kids' Party"

together much social welfare work is accomplished by the Great Northern clubs.

In August of each year the annual picnic of St. Paul employees is held, with an average attendance of five thousand.

Outstanding evidence of enterprising and disinterested activities of Great Northern employees is indicated by the many gardens promoted by the recent beautification program of employees along the line of the railroad. The beautiful garden at the Dale street shops* in St. Paul had its beginning in 1923 in a barren tract of cinders when one man asked permission to employ his noon hour in pursuit of his hobby for gardening. His energy inspired enthusiasm in others and it was but a short time before a number of men were devoting, not only their noon hour, but Saturday afternoon as well, to the work, with the result that there was dedicated on August 29, 1925, a commodious green house built by shop employees on their own time and at their own expense.

The numerous activities of Great Northern clubs have created an excellent impression upon the public along the line of the railway and also produced a fine spirit of co-operation between the management and employees. Great Northern entertainers and speakers visit universities, high schools and business colleges, service clubs and other organizations, working under the direction of the Bureau of Public Relations, of which Edward F. Flynn, assistant to the vice-president and general counsel, is the director.

The Great Northern official magazine, the "Sema-phore," further serves to bring together employees and officials, the dissemination of news of social and other activities fostering and cementing the spirit of camaraderie which exists in the Great Northern family.

There is also the Great Northern "Goat," a miniature magazine published by the advertising department, which serves in tabloid form, fun and facts—amuses and instructs.

The executives of the company are heartily in sympathy with the club movement, which has proved to be also a worth-while business getter. The employees feel that the Great Northern is their road; that they are not mere automatons, and consequently take pride in working with and for the railroad company.

While operating independently of each other and under no central direction, reports from the various clubs indicate the same ambitious trend toward loyalty and co-operative achievement, the efforts of all members being merged in one vast constructive program of progress. Great Northern Railway clubs in order of their institution are: St. Paul Chapter, No. 1; Spokane, Washington, No. 2; Havre, Montana, No. 3; Great Falls, Montana, No. 4; Minneapolis, Minn., No. 5; Wenatchee, Wash., No. 6; Sioux City, Iowa, No. 7; Seattle, Wash., No. 8; Whitefish, Mont., No. 9; Everett, Wash., No. 10; Vancouver, B. C., No. 11; Superior, Wis., No. 12; St. Cloud, Minn., No. 13; Minot, North Dakota, No. 14; and Breckenridge, Minn., No. 15.

*See *Railway Age*, September 19, 1925, page 534.

THE CITY OF DENVER, COLO., has filed suit in the district court, asking a judgment of \$2,093 against the Chicago, Burlington & Quincy, for damages to the Fourteenth Street concrete viaduct, resulting from smoke from the company's locomotives. The complaint states that the chemicals within the smoke caused considerable damage, the amount asked for being the cost to the city for repairs.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading again established a new record in the week ended October 16, with a total of 1,210,163 cars, as compared with the previous record of 1,187,011 cars in the week ended September 18. This was the twenty-first week this year in which over a million cars were loaded and brings the total for the year to date up to 42,832,438 cars, as compared with 41,218,272 cars in the corresponding week of last year. As compared with the corresponding week of last year the loading in the week of October 16 was an increase of 104,154 cars and as compared with 1924 it was an increase of 107,863 cars. Coal loading reached the high figure of 223,221 cars, an increase of 36,775 cars as compared with last year, and miscellaneous loading amounted to 462,348 cars, an increase of 39,206 cars. Increases as compared with the corresponding weeks of both of the past two years were reported from all districts except the Central Western, which fell behind the 1924 figure and in all classes of commodities except livestock and coke, which showed a lighter loading than in 1925 and grain and grain products, livestock and forest products which fell behind the 1924 figures. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

REVENUE FREIGHT CAR LOADING
Week Ended Saturday, October 16, 1926.

Districts—	1926	1925	1924
Eastern.....	274,879	241,842	245,600
Allegheny.....	240,737	214,712	212,160
Pocahontas.....	62,549	57,839	52,744
Southern.....	170,255	161,598	155,470
Northwestern.....	187,574	174,673	168,957
Central Western.....	181,332	174,835	187,259
Southwestern.....	92,837	80,510	80,110
Total Western Districts.....	461,743	430,018	436,326
Total All Roads.....	1,210,163	1,106,009	1,102,300
Commodities—			
Grain and Grain Products.....	53,858	45,205	69,923
Live Stock.....	40,792	43,872	43,154
Coal.....	223,221	186,446	192,245
Coke.....	13,182	13,343	9,654
Forest Products.....	72,141	68,223	72,329
Ore.....	69,023	55,239	41,899
Mdse. L. C. L.....	275,598	270,539	255,883
Miscellaneous.....	462,348	423,142	417,213
October 16.....	1,210,163	1,106,009	1,102,300
October 9.....	1,184,862	1,106,036	1,088,956
October 2.....	1,185,524	1,113,283	1,007,748
September 25.....	1,182,940	1,121,025	1,087,954
September 18.....	1,187,011	1,098,627	1,076,847
Cumulative Total, 41 Weeks.....	42,832,438	41,218,272	38,970,947

The freight car surplus for the week ended October 15 averaged 86,932 cars, a decrease of 13,137 cars as compared with the previous week. This included 16,453 coal cars, 48,295 box cars and 4,117 refrigerator cars. The Canadian roads for the same week had a surplus of 7,500 cars, including 6,100 box cars.

Car Loading Record in Canada

Car loadings during the week ended October 16 were the heaviest yet recorded; they amounted to 85,207 cars, an increase of 7,103 cars over the previous week, and

Commodities	Total for Canada			Cumulative Totals to Date	
	Oct. 16 1926	Oct. 9 1926	Oct. 17 1925	1926	1925
Grain & Grain Products	22,936	18,043	17,080	325,534	310,802
Live Stock.....	2,917	2,443	3,457	86,988	96,167
Coal.....	9,328	9,415	7,394	235,553	157,237
Coke.....	461	331	331	14,911	11,550
Lumber.....	3,852	3,622	3,507	149,956	147,626
Pulpwood.....	1,920	1,788	1,354	111,349	107,205
Pulp and Paper.....	2,315	2,441	1,991	98,036	83,520
Other Forest Products..	3,063	3,000	2,867	127,140	115,330
Ore.....	1,945	2,111	1,776	71,269	57,639
Merchandise, L. C. L..	17,965	18,186	16,582	670,448	627,500
Miscellaneous.....	18,505	16,724	17,365	584,628	522,929
Total Cars Loaded.....	85,207	78,104	73,674	2,475,812	2,237,505
Total Cars Rec'd from Connections.....	37,361	38,290	34,489	1,526,621	1,362,072

6,582 cars over the previous record of November 21, 1925. The big increase was in grain which was heavier by 4,130 cars in the western division and 763 cars in the eastern division. Livestock increased by 474 cars, lumber by 230 cars, and miscellaneous freight by 1,781 cars. Merchandise showed a small decrease due to lighter loading in the western division.

Lease of Virginian Disapproved

WASHINGTON, D. C.

ASSERTING that "applications for authority to acquire control of railroads under the interstate commerce act must be supported by a clear showing of public gain," the Interstate Commerce Commission, in a unanimous decision issued on October 22, dated October 11, found that the proposed lease of the Virginian to the Norfolk & Western would not be in the public interest.

The adverse finding and denial of the Norfolk & Western's application was based on the statement that all competition between the lines of the two companies, which are substantially parallel between Norfolk and Kelleysville, Va., would be eliminated and that important shipping points would be deprived of competitive service. Nothing in the decision, the report says, should be construed as indicating the views of the commission regarding the final disposition of the Virginian, which its tentative consolidation plan in 1921 had grouped with the Chesapeake & Ohio in proposed system No. 8. The Van Sweringen interests had negotiated for a joint control of the Virginian by the C. & O. and Norfolk & Western but the latter had rejected the proposal and the Virginian had accepted its offer of a rental which would have paid 6 per cent on the stock of the Virginian, and would have obligated the N. & W. on the basis of the latest figures available, to make annual payments of \$8,204,789. The president of the Chesapeake & Ohio had testified at the hearing that if the application should be denied and the Virginian should be allocated to the C. & O., that company or the Nickel Plate system, as the case may be, would make every reasonable effort to bring about the acquisition of control of the Virginian on terms and conditions that would meet the commission's approval.

The final report of the entire commission is in accord with the proposed report submitted in this case by Examiner Haskell C. Davis, who had recommended denial of the application. The lease had been opposed by the state authorities of Virginia and several cities as well as by various associations of business men and individual shippers and by the Chesapeake & Ohio and Baltimore & Ohio. The commission says that in view of its conclusions it is not necessary to consider the legal contentions raised by the state authorities that the lease would be ultra vires the charters of the two companies and contrary to the constitution and statutes of Virginia. In expressing its conclusions the commission says:

The conclusion that the proposed lease would result in eliminating existing routes and channels of trade appears warranted by the record. The chief traffic official of the N. & W. testified that under unified operation of the Virginian and N. & W. the use of the Deepwater route would be discouraged, but that it would be kept open if found to be an efficient route. No reason appears why the N. & W. would be interested in maintaining a competitive through route via Deepwater, which would short-haul its own traffic. As heretofore pointed out, a substantial volume of traffic moves through the Deepwater gateway, and this traffic would be increased largely if the Virginian should join the C. & O. in rates on westbound coal.

Under the proposed lease all competition between the lines of

the two companies would be eliminated. Important shipping points would be deprived of competitive service. The president of the Virginian testified that the elimination of competition in rates and service would injure any town through which the two roads pass, and this conclusion is corroborated by the testimony of the protestants.

Nothing herein should be construed as indicating our views regarding the final disposition of the Virginian.

Applications for authority to acquire control of railroads under the interstate commerce act must be supported by a clear and strong showing of public gain. If serious doubt exists regarding the wisdom of the proposed grouping, that doubt must be resolved against the applications. Real and substantial advantages of railroad grouping are capable of reasonable proof. So are the disadvantages. There must be of record a substantial preponderance of evidence in favor of an application before we are warranted in giving it favorable consideration.

Upon the facts presented we are unable to find that the acquisition by the N. & W. of control of the Virginian Railway, under the terms of the lease described in the application, will be in the public interest. An order will be entered denying the application.

While the commission did not mention in its conclusions the allegation of certain of the protestants that the execution of the lease would give to the Pennsylvania, through its influence over the Norfolk & Western, the means and power of "stifling the development" of the low volatile fields of southern West Virginia as competitors of the Pennsylvania fields, it discussed the point in its review of the evidence. After stating that four of the 11 directors of the N. & W., are either officers or directors of the Pennsylvania and that while the Pennsylvania does not own or control a majority of both classes of the N. & W.'s capital stock, "it appears that its concentrated holdings give it a large influence in that company's affairs, with an absolute control over the issue of any obligations to be secured by a mortgage," the report refers to the N. & W., control of the Pocahontas Coal & Coke Company, owning low volatile coal lands in southern West Virginia, and adds: These coal fields are in competition with those served by the Pennsylvania Railroad in Pennsylvania. The testimony is that the Pennsylvania is the greatest coal-carrying road in the country, and that it has always opposed any great development of the New River and Kanawha, W. Va., fields."

Regarding the estimates of operating economies to be effected by joint control of the two properties the report says that "considering the testimony as a whole it fails to establish that the N. & W. could effect the operating savings which it anticipates. In the absence of a definite plan for operation, it would appear that the evidence relating to prospective operating economies is largely speculative. It also says that "testimony for the N. & W., is that any economies to be effected will not be reflected in reduced rates if the company can prevent it." Evidence was offered by the N. & W. to the effect that its railroad and the Virginian are connecting and not competing lines, and considerable testimony was devoted to a differentiation of market, route, and carrier competition. The N. & W. claims that there is no competition between the two roads as to coal, which constitutes seven-eighths of the Virginian's traffic, and that competition extends only to a very small part of the merchandise traffic. As to this the commission says: "The conclusion that the two lines are in direct carrier competition appears inevitable from the record. There is strong competition between New River coal mined on the Virginian and Pocahontas coal mined on the N. & W., the coal being sold in the same markets and transported at the same rates. While admitting this to be true, the N. & W. classes it as market and not carrier competition. . . . The competition extends to export, import, coastwise and intercoastal business through the port of Norfolk."

Florida Transportation Field Survey

*Estimates compiled under direction of Department of
Commerce predict increase in traffic*

WASHINGTON, D. C.

CAR loadings and unloadings of the principal commodities in Florida during the last quarter of 1926 are estimated in excess of the corresponding figures for last year in a report of a Florida Transportation Field Survey conducted by the Department of Commerce, under the direction of A. Lane Cricher of its Transportation Division, at the request of the Florida Division, Southeastern Advisory Board. The survey was conducted with the assistance of that board, the Car Service Division of the American Railway Association, the railroads serving Florida, and various civic associations and municipal authorities. A brief summary of the report was presented at the recent Tampa meeting of the Florida Advisory Board.

On May 15, 1926, the Florida Division requested the Department of Commerce to undertake a transportation field survey of the state of Florida. At an executive committee meeting of this board, June 18, with representatives of the Bureau of Foreign and Domestic Commerce, the scope of the survey desired was determined. There were five main objectives:

1. Stocks on hand; 2. Production and production capacity; 3. Turnover; 4. Methods of shipping and receiving goods; and 5. Estimate of car requirements for the immediate future.

Sixteen principal commodities were included and nine inbound commodities were studied, for which a detailed questionnaire was used: Cement; lime, plaster, stucco; tile, including sewer pipe; brick, all kinds; slag, stone, sand, gravel, clay; iron, steel, all kinds, including machinery; autos, trucks, tractors and accessories; furniture except household goods; and all products of forest.

Seven outbound commodities also were studied in co-operation with the Shippers' Commodity Committees of the Florida Advisory Board: Citrus fruit; fresh vegetables, melons, etc.; fertilizer; phosphate rock; naval stores; petroleum and products; and lime rock.

There follows a summary of the report of the Survey. The data represent totals of the figures from each of the ten terminal districts of the state. In addition to this summary and tables upon which it is based, the official bulletin of this survey will include also individual commodity tables, ten district summaries of the railroad and

the commodity questionnaire data, and other information furnished in connection with the survey work.

Summary of the Report

"A greater rail movement in Florida during the last quarter of this year as compared to the same period last year is indicated by the estimated car loadings and unloadings of principal commodities, as determined by the terminal district and shippers' commodity committees co-operating with the Department of Commerce in a survey of Florida transportation requirements. Car unloadings for nine commodities for all districts except Miami, during the last quarter of 1926, are estimated at 88,546 cars, thus indicating both a normal stock replenishment and a larger consumption in the state. Loadings for seven commodities for all districts are estimated at 83,938 cars for the last quarter of 1926, there being a considerable increase over last year due to anticipated large agricultural production and freedom of movement of lime rock shipments. These loading estimates do not reflect the changes which the recent storm may make in the fruit and vegetable movement.

"Car loadings for the first six months of 1926 were approximately the same as for the same period of 1925, totaling over 280,000 carloads. Car unloadings for these periods were 302,517 cars and 253,605 cars respectively, for 1926 and 1925, indicating that the amount of business for the first half of 1926 was actually greater than during the same period of 1925. These data were supplied by the railroads in Florida. The totals for each commodity were determined from the car loadings and unloadings at all stations loading or unloading one hundred or more cars per month in the period covered, and represent from eighty-five to ninety per cent of the total aggregate tonnage of the state.

"The total number of cars unloaded in all Florida in October, 1925, in the nine commodities included in the questionnaire used in this survey were 28,399; the estimates of car requirements for nine districts the last quarter of this year are 27,463 cars in October, 31,032 cars in November and 29,851 cars in December. These estimates do not include the Miami District, due to the West Indian hurricane, which has caused a change in the

TABLE I
ALL FLORIDA DISTRICTS
Statement of Cars LOADED during following periods—Florida, All Railways.

	1925				1926				6 months	6 months	6 months
	1925	1925	1925	1925	1926	1926	1926	1926	1925	1925	1926
	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	Jan.-June	Jan.-June	July-Dec.	Jan.-June
Cement	156	163	170	284	438	135	171	986	1404	1694	
Commodities in Carload Lots	116	128	104	118	198	132	83	665	782	731	
Lime, Plaster, Stucco	177	124	203	131	125	231	84	864	669	981	
Tile, inc. Sewer pipe	606	573	576	508	430	317	245	3192	2538	2025	
Brick, all kinds	7009	8406	9061	6546	6426	11083	9758	43664	38644	54467	
Slag, Stone, Sand, Gravel, Clay	416	564	527	309	445	522	516	2565	2880	3152	
Iron, Steel all kinds, inc. Mch.	280	501	557	447	40	402	274	2827	1629	1447	
Autos, Trucks, Tractors and Access.	0	3	5	18	37	25	5	25	96	107	
Furniture except H.H. Goods	12322	11712	11120	10381	10674	10360	8852	70331	60622	62302	
All products of forest	6340	4416	60	1064	4354	3447	91	23513	10016	18074	
Citrus Fruit	2706	6235	1634	191	1236	5515	2749	26811	3205	20286	
Fresh Veggies., Melons, etc.	2616	1429	553	1230	1836	1076	510	12550	6518	11782	
Fertilizer	4738	4749	5533	4154	3863	4427	3765	28713	29667	27911	
Phos. rock	234	207	342	225	164	126	155	1385	1551	1042	
Naval Stores	4521	4153	4021	4744	5747	5222	5071	25571	20546	31714	
Petroleum & products	375	297	273	322	280	308	246	1964	1531	1631	
Grain & Products, inc. Feed & Hay	381	259	309	346	384	344	269	1664	1741	2011	
Food Stuffs, inc. Canned Goods	914	1356	987	684	909	2039	4311	6086	4253	12547	
Lime rock	4731	4519	4501	4975	4868	4557	4698	27233	26795	28906	
All other articles											
Total	48638	49794	40536	36667	42454	50268	41853	280609	215087	282810	

estimates for that district. The Pensacola estimate, however, has been revised and is included. Had the Miami figures of car requirements been included these estimates would be materially higher.

"During October, 1925, 12,282 carloads of vegetables, citrus fruit, fertilizer, lime rock, phosphate rock, petroleum and naval stores were loaded in Florida. The estimates of loadings for the last quarter of 1926 are October 23,987 carloads, November 28,269 carloads, and December 31,682 carloads. These estimates of loadings are inclusive of the Miami District, comprehending the entire state of Florida. Approximately 7,000 carloads per

formation was furnished for citrus fruit, fresh vegetables and melons, fertilizers, phosphate rock, naval stores, petroleum and its products and lime rock. The data and estimates were furnished by the carriers, and the shippers' commodity committees of the Florida Advisory Board.

The data furnished in the report includes recapitulations of:

(1) The railway data of cars loaded for nineteen items and total for the state of Florida.

(2) The railway data of cars unloaded for nineteen items and total for the state of Florida.

TABLE II
ALL FLORIDA DISTRICTS
Statement of Cars UNLOADED during following periods—Florida, All Railways.

Commodities in Carload Lots	1925				1926			6 months	6 months	6 months
	Jan.	Apr.	July	Oct.	Jan.	Apr.	July	1925 Jan.-June	1925 July-Dec.	1926 Jan.-June
Cement	982	1201	1663	1994	1877	1574	1386	7807	9431	9931
Lime, Plaster, Stucco	387	415	563	802	865	453	273	3012	3866	3483
Tile, inc. Sewer pipe	417	588	744	1120	853	1090	896	3498	4673	5717
Brick, all kinds	1226	1496	1986	2242	1732	2461	1683	9407	10676	12898
Slag, Stone, Sand, Gravel, Clay	3778	4911	5233	5236	4936	8649	8511	25989	26784	43893
Iron, Steel, all kinds, inc. Mchy.	633	927	1081	1163	1020	1169	1153	5261	6421	6753
Autos, Trucks, Tractors & Access.	1152	1220	2018	2764	949	1092	877	8642	12712	6365
Furniture except H.H. Goods	191	178	281	537	475	231	224	1136	2495	1858
All products of forest	11960	12985	9596	12541	11004	9329	7684	72515	69285	64168
Citrus Fruit	384	248	12	41	250	170	21	1321	557	1076
Fresh Vgs., Melons, etc.	414	385	692	928	734	504	2080	2450	5073	3908
Fertilizer	1439	505	525	901	1066	634	535	6725	4390	6938
Phos. rock	694	934	835	907	1346	1147	2226	4994	5312	7197
Naval Stores	570	499	920	563	514	350	726	3279	4209	3047
Petroleum & products	2095	1883	2043	2487	3108	2779	2525	11346	13947	17080
Grain & Products, inc. Feed & Hay	1883	1750	1636	1823	2177	2063	1718	10445	10731	12582
Food Stuffs, Inc. Canned Goods	1388	1225	1854	2473	2242	1904	1623	7739	11533	11775
Lime rock	3730	4063	3705	2828	2288	4243	6258	19223	14346	24824
All other articles	8009	7756	7954	11167	11206	9949	5712	48766	48337	59024
Total	41323	43169	43341	52517	48642	49791	46111	253605	264978	302517

month of this increase are accounted for by the lime rock shipments, precluded in 1925 to a large extent by congestion.

"In 1925, a total of 9,962,200 tons valued at \$438,439,000 were shipped to and from Florida ports. In 1924, this traffic aggregated 7,414,000 tons worth \$372,830,000.

"Florida business will benefit by a regular collection of quarterly data on car requirements and stocks on hand. The direct value of the data is such that shippers, receivers and others involved in such work would benefit greatly from the information and would co-operate fully in its determination. It is suggested that the Florida Advisory Board of the American Railway Association secure each quarter the facts concerning stocks on hand and estimated car requirements."

The commodity reports are based upon 90 per cent or more of the tonnage of each terminal district for each of the commodities included. Over 1,760 correctly answered questionnaires supplied the data. The periods included in the questionnaire used were of January, April and July, 1926, comprehending stocks on hand, turnover, production, and methods of shipping and receiving goods. The unloading figures were furnished by the railroads of Florida. The estimates are those determined by the Terminal District Committees of the Florida Advisory Board co-operating with the Department of Commerce in the survey. The estimates for the nine commodities do not include the Miami district, due to the West Indian hurricane, which has caused a change in the estimates for that district. The estimates, therefore, comprehend nine districts of the state. Had the Miami figures of car requirements been included, these estimates would be materially higher.

No inquiry as to stocks on hand or turnover, or the method of shipment, was made for the commodities included in the data furnished by the Shippers' Commodity Committees of the Florida Advisory Board. The in-

(3) The railway data of car loadings for nine survey commodities.

(4) The railway data of car unloadings for nine survey commodities.

(5) The railway data of car loadings of the seven shippers' commodities.

(6) The railway data of car unloadings of the seven shippers' commodities.

(7) October railway unloading data of the nine survey commodities and the estimates for October, November, and December, 1926.

(8) October railway loading data of the seven shippers' commodities and the estimates for October, November, and December, 1926.

(9) Steamship data of the total movement to and from Florida points, 1924 and 1925.

(10) Recapitulation of the stock on hand in Florida for nine survey commodities.

(11) Questionnaire commodity summary for all producers for the state of Florida.

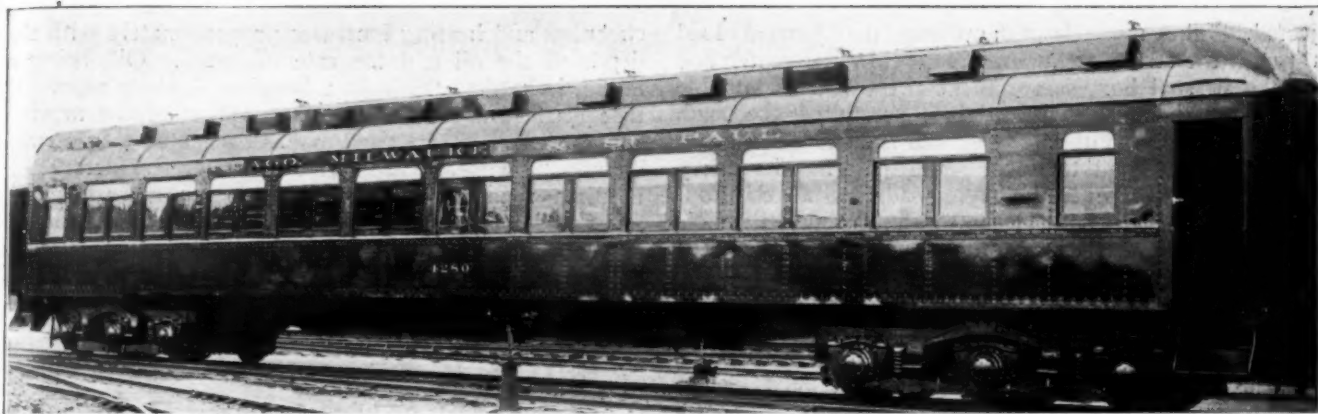
(12) Questionnaire commodity summary for all wholesalers, jobbers, brokers with facilities, and wholesalers and retailers, combined for the state of Florida.

(13) Questionnaire commodity summary for all retailers for the state of Florida.

(14) Questionnaire commodity summary for all contractors for the state of Florida.

Tables I and II give figures for the cars loaded and unloaded for all Florida districts.

THE CANADIAN PACIFIC has contracted with the Canadian Vickers, Ltd., Montreal, Que., for the construction of a car float for service between Kootenay Landing, B. C., and Proctor, on Kootenay Lake. The float, which will be 230 ft. long, 43 ft. wide and 8½ ft. deep, with a capacity for 15 cars, will be shipped knocked-down a distance of 2,600 miles to Kootenay Lake where it will be assembled.



C. M. & St. P. All-Steel Passenger Coach No. 4280 Equipped with Roller Bearings

St. Paul Places Order for Roller Bearing Equipment

Total of 127 passenger cars to be provided with anti-friction bearings—L. K. Sillcox outlines test results in staff meeting paper

AS a result of tests conducted over a period of two years, demonstrating the practicability of roller bearings of several types and their advantages over plain bearings, the Chicago, Milwaukee & St. Paul recently decided to make an extensive installation of roller bearing-equipped passenger trains. Sixty-four new Pullman cars and 63 cars of St. Paul ownership were accordingly ordered fitted with roller bearings. While both Hyatt and S.K.F. bearings were tested with satisfactory results, the order for roller bearings for this equipment was placed with the Timken Roller Bearing Company, Canton, Ohio.

The experience of the St. Paul in testing roller bearings as compared with plain bearings was outlined recently by L. K. Sillcox, general superintendent of motive power in a paper read at the Chicago, Milwaukee & St. Paul annual car department staff meeting, held at Milwaukee, Wis., September 20, 21, and 22. An abstract of this paper appears below:

Mr. Sillcox's Paper

Among the advantages which test experience on the Chicago, Milwaukee and St. Paul indicates may be expected of roller bearings as applied to passenger car equipment are reduced train resistance, practical elimination of rough handling in starting long trains, easier riding equipment, less chance of hot boxes, ample warning when defects develop, fewer slid flat wheels and a saving in lubricants. Another practical consideration is the possible elimination of different engine ratings for summer and winter where air temperatures have a wide variation.

While roller bearings have been discussed and considered for steam railway service during a period of almost 25 years, the missing quality has always been that of durability, and designers of such bearings in their efforts to produce something suitable apparently erred on the side of giving the mechanics of the subject

too much attention. They seemed to be interested chiefly in obtaining large contact areas, and in their endeavor along these lines, unfortunately neglected many other essentials, which were necessary in the development of this heavy type of bearing.

Eventually, it was realized that it was not sufficient to state simply that a bearing dealt with so many pounds load at a certain speed. The fatigue resisting properties and ability of the bearing to absorb and direct elements of side thrust under very difficult conditions of load and speed, needed consideration as well. Where the loads were high, but the speed low, the problem could always be solved by means of a ball-type bearing; but such bearings would have to be of dimensions quite impracticable in many cases, and necessitated redesign of truck frames and associated parts in order to accommodate the new construction. This fact, together with the higher cost of the bearing itself, presented a problem which has until recently appeared insurmountable from a financial standpoint.

Roller Bearing Developed for Standard Truck Design

For this reason months were spent on the Chicago, Milwaukee & St. Paul endeavoring to develop a roller bearing which would take our standard type truck construction. This was worked out by engineers of S.K.F. Industries, Inc., New York, the final result being an assembly as illustrated in the photograph and one of the drawings. It will be quickly recognized that a standard cast steel truck frame was used and the only change made was that of applying straight equalizers rather than the curved ones, as in the past.

It will be observed that in the design of the cast steel pedestals, the pedestal legs were shortened to accommodate the new type box, and made considerably stiffer to eliminate the necessity of using a tie bar between them, sufficient rigidity being obtained to take care of the longitudinal thrust to which they are sub-

jected. The method of applying the journal load through the straight equalizer and below the center line on the journal box, serves to keep the box in suitable alignment through the pendulum action of the load. The journal box is of cast steel, and since it is subjected both to tensile and torsional stresses, it has its heavy section around the load-carrying surface at the top, and stiffening ribs both at the top and around the bottom stirrup which carries the equalizer. The outer race of the bearing is in contact with the crown of the box through an arc of 150 deg. A forged shoe is dropped in the bottom of the stirrup to center the equalizer properly and secure it against motion longitudinally. A safety hanger is provided between the equalizer bar and the pedestal. Manganese steel pedestal liners are employed.

A design using bearings made by the Hyatt Roller Bearing Company, Newark, N. J., also illustrated in a drawing, has been developed and is operating under Coach 4283. The third drawing shows the design of a four-motion journal box with Timken roller bearings, developed and adopted for use on the equipment just ordered.

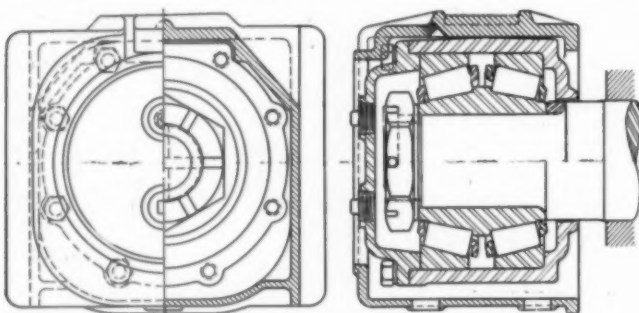
From these drawings, a good idea may be gained of the types of bearings discussed. Both the S.K.F. and Timken bearings employ rollers having a maximum pressure on the outside, thus forcing the oil toward the center and assisting constant lubrication. The Hyatt bearing has a plain roller, non-opposing and thus necessitates an end thrust washer to take the lateral strain.

Vital Factors in Roller Bearing

Design for Railroad Equipment

From the experience gained, it is our judgment that the selection of roller bearings should be made on the following basis:

- 1—Minimum friction.
- 2—Ability to deal with both thrust and radial loads.
- 3—Ability to deal with thrust load in one direction.
- 4—Ability to operate successfully for at least 1,000 miles after



Four-Motion Journal Box (Pedestal Type) with Timken Roller Bearing Fitted to a 5-in. by 9-in. Journal

becoming initially defective, in order to allow a car to be brought to a terminal.

- 5—Ability to operate a minimum of 600,000 miles without failure of parts, wreck damage excepted.
- 6—The unit should be self-contained, with minimum number of loose parts, and should be non-adjustable.
- 7—The unit should be capable of quick inspection.
- 8—The unit should have the feature of self-alignment.

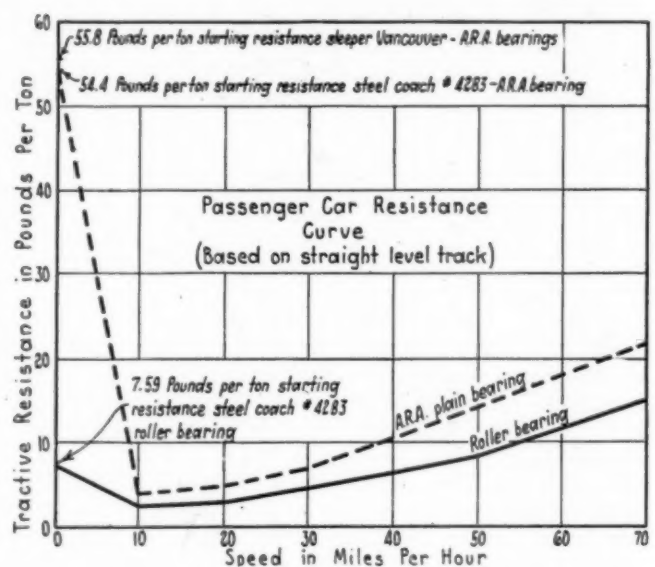
The ideal lubrication for an anti-friction bearing is a constantly circulating oil in an ample, but not too ample, volume and with only slight pressure.

Five main difficulties lie in the way of oil lubrication. Heat is generated by the churning of the oil at speeds as low as 300-400 r.p.m. (32-43 m.p.h.) unless an overflow is provided to maintain a proper level. This

churning and heating increases proportionately with the depth of the oil and the rate of speed. Oil, being a liquid, is hard to retain in a housing. This is especially true because under the churning action of the moving rollers the oil is vaporized and is dissipated to a certain degree. Owing to vaporization and other factors, oil requires renewal every six months or more. When axles are not revolving, force of gravity draws the oil to the bottom of the housing, leaving the bearing dry and exposed to rust; filling housings full enough to cover the rollers at all times results in the above-mentioned churning and heating.

Oil Is More Expensive Than Grease

However proper oil lubrication might be, it is almost impossible to attain minimum rates of expense under the average service conditions. As a result, grease is generally recommended for use where possible, at all speeds and temperatures and for all sizes of bearings. This



Comparative Resistances of Plain and Roller Bearings

does not mean that on some applications oil will not give satisfactory service, but that a proper quality and grade of grease on these applications should give equal, if not better, service with less trouble.

This recommendation is based on the following points:

- 1—Grease of the proper consistency does not work out of the housing.
- 2—Enclosure design is simplified.
- 3—Grease applied with a modern type of gun is kept perfectly clean.
- 4—Grease does not need as frequent renewals.
- 5—Grease does not sink to the bottom of the closure when the bearing is idle.
- 6—Suitable greases should be easy to obtain.
- 7—Since grease tends to fill the space between shaft and housing, it assists materially in keeping out dirt.
- 8—Under the high speeds the rise in bearing temperature is less than with oil.

The essential properties of a suitable roller bearing grease are: (a) Consistency a little stiffer than vaseline (this is important, as a grease of this consistency is stiff enough not to churn at high speeds, yet soft enough not to dry); (b) no abrasive or body-giving matter, such as talc, graphite or pumice; (c) mineral base—not vegetable or animal.

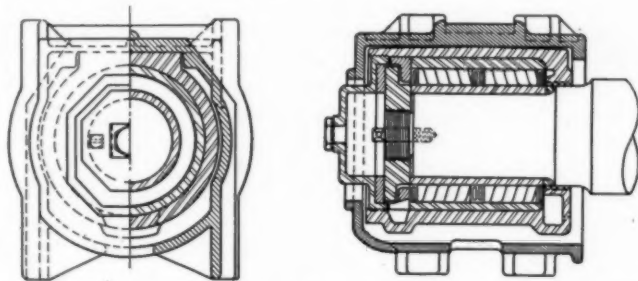
For a range in speeds of 300 to 840 r.p.m. (32-90 m.p.h.) a grease renewal once a year is said to be ample.

Under any conditions the most frequent renewal is every six months.

At the time of renewal the housing should be filled up until some of the old grease works out which can be wiped off. This is also a good time to note the quality of the grease last used and to see whether it has hardened. The tendency of grease to dry out is what really determines the frequency of lubrication.

Train Resistances Compared

The best information which we have covering a comparison of resistances of cars equipped both with roller and plain bearings is shown in one of the charts.



Hyatt Roller Bearing Applied to a 5-in. by 9-in. Car Journal

Our tests indicate that with steel sleepers the starting resistance may be as high as 55.8 lb. per ton; for steel coaches 54.4 lb. per ton; while under the same conditions, at the same time, resistance for steel coaches fitted with roller bearings was 7.59 lb. per ton. Under these circumstances it is possible to require in starting the Pioneer Limited, 15 cars, an effort from the locomotive of 67,200 lb. for equipment as fitted with plain bearings, as against 9,120 lb. required under these circumstances for equipment fitted with roller bearings—or in the ratio of approximately 7 to 1.

From available information, it is clear that the greater the weight per coach, the lower will be the running resistance per ton and, consequently, the greater the proportional advantage of anti-friction bearings. It also seems clear that the lower the speed, the greater the advantage to be obtained with roller bearings. The chart referred to seems to bear out this point. Drifting results obtained with plain and roller bearings are illustrated in a second chart.

Granting the reduction in starting resistance that any good anti-friction bearing will make possible, the question then becomes, in my opinion, one of life and cost. The utilization of the reduction in starting effort ought to bring about an entire change in motive power economics, but this will be a slow development with a good deal of resistance to be overcome. Those who have used roller bearings most extensively have been so satisfied with the practical results that they have thus far not been disposed to attempt to compare train resistance data through such elaborate tests as would be necessary. Therefore, they have only sought to confirm the known starting economy of roller bearings.

One of the principal difficulties encountered in attempting to evaluate the decrease in train resistance resulting from the use of roller bearings, is the lack of a definite standard for comparison in the form of data representative of standard friction bearing equipment. There is no question but that the variation in the friction of the plain journal bearing is an important factor and tests have been made to show the effect of journal temperature on train resistance. Whatever figures are available make it apparent that the actual train resistance

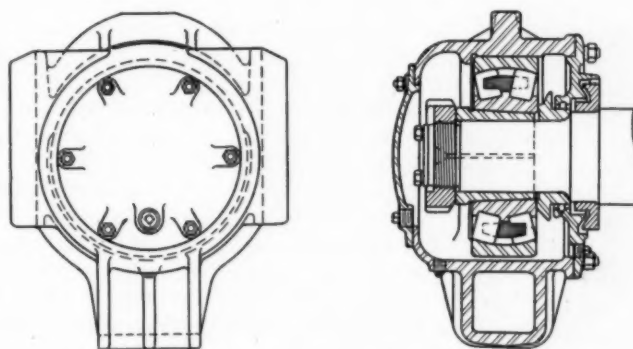
of plain bearing equipment is very indefinite except in terms of general averages interpreted as representative of normal conditions. On the other hand, our experience with anti-friction bearings has shown that the friction of the bearing is constant over a wide range of speed and temperature conditions.

The inherent characteristics of the two types of bearings justify certain inferences. It is known that the efficiency of the plain bearing is determined by the factors that control the establishment of the oil film. These include both temperature and speed, which are obviously variable in train operation, and also unit pressures which will vary with the type of equipment. The resistance of the roller bearing is practically independent of temperature and speed through such range as is experienced in train operation. An analysis of exhaustive tests of plain bearings which are comparable with those employed on car journals, indicates that only under most favorable conditions will the friction in a standard plain bearing compare favorably with that uniformly experienced with the roller journal bearing. Practical limitations preclude the normal operation of plain bearings under those favorable conditions, since the low viscosity of oil required does not provide a sufficient margin against sudden incidental effects, which would lead to a further decrease in viscosity.

Brake Action on Roller Bearing Car Studied

The effect of roller bearings on brake action was studied recently; two coaches as nearly identical as possible in weight, brake equipment and truck construction, except that one had roller and the other plain brass bearings, were tested at Western Avenue, Chicago. Eight tests in all were made, the cars being stopped from various speeds with several different service and emergency brake applications.

It was observed that the wheels on the coach with



Roller Bearing Car Journal Design Using S. K. F. Bearings on 5-in. by 9-in. Journal

roller bearings did not slide at any stop, while the rear wheels of the trucks on the coach with brass bearings slid at every stop made with an emergency application, the cause of the rear wheels sliding being due to the transfer of weight during the quick stop. This transfer of weight did not seem to affect the coach with roller bearings. The coach with the roller bearings ran a slightly greater distance, while subjected to the same applied brake force, than the other car, but the difference was so small as to have no noticeable effect in controlling the train.

In connection with roller bearing applications, the importance of providing suitable hand brakes, buffers and draft gears (no preliminary spring action being required as at present to aid in starting trains), must not be

overlooked. The advantages to be gained from drifting roller bearing-equipped trains are readily apparent and should be studied in service with a view to relieving the engine and consequently the coal pile to the greatest possible extent.

Valuation Briefs Stricken From Commission Files

WASHINGTON, D. C.

DIVISION 1 of the Interstate Commerce Commission has taken a hand in the controversy that has been going on between attorneys for its Bureau of Valuation and for the Wheeling & Lake Erie, in connection with the valuation proceedings involving that road, by ordering stricken from the commission's files both the answer brief of the Valuation Bureau in reply to the opening brief of the railroad, and the reply brief of the railroad, as both containing "language scandalous and disrespectful to opposing counsel and individuals."

This announcement was made by Commissioner B. H. Meyer on October 25 at the opening of the oral argument before Division 1 on the Wheeling & Lake Erie valuation report, and at the same time Commissioner Meyer on behalf of Division 1 took occasion to admonish counsel that the commission would insist upon a respectful presentation.

The matter had been brought to the attention of the commission by the Bureau attorneys, who had filed a motion to strike from the record the reply brief of the Wheeling & Lake Erie for "improper and offensive language used to characterize the witnesses and attorneys who have represented the commission and participated in the hearing." They had also set out samples of the language referring to themselves to which they objected, which were quoted in the *Railway Age* of October 23, page 767. Squire, Sanders & Dempsey and W. R. Van Campen, representing the Wheeling & Lake Erie, had then filed a reply to the motion, stating that their language was justified by the acts of the Bureau representatives, and asking a hearing.

At the opening of the argument Commissioner Meyer said:

"Division 1 has given careful consideration to the motion filed by the Bureau of Valuation to strike from the files the brief of protestants because of alleged scandalous and disrespectful language therein, and has considered as well the answer made by protestants to such motion. The Division has examined the briefs filed in this proceeding, namely the opening brief for the protestants, the answer of the Bureau of Valuation, and reply brief of protestants.

"With respect to such briefs the Division finds that the answer brief of the Bureau of Valuation and the reply brief of the protestants both contain language scandalous and disrespectful to opposing counsel and individuals, and that they have been used as a medium for the conveyance of disrespect and professional discourtesy to opposing counsel and witnesses.

"The Division further finds that much of the matter to which protestants have taken exception should properly have been brought to the attention of the Commission in the opening brief of the protestants, and should not have been reserved for reply.

"Upon consideration, the Division finds and hereby orders that the answer brief of the Bureau of Valuation

and the reply brief of the protestants shall both be stricken from the files, and shall be returned by the Secretary of the Commission to the parties who filed the same.

"In connection with the oral argument which is about to be heard, the Division admonishes counsel that regardless of anything which may have transpired before an examiner of the Commission, the Commission insists in this proceeding that the presentation to be made whether by written or oral word, must be respectful to the Commission, to employees thereof, to opposing counsel, and to other individuals, and that no deviation from this rule will be tolerated. Please proceed to argue the merits of the case."

The railroad attorneys in their reply said the motion of the Bureau should be denied for the reason, among others, "that the Bureau does not come before the Commission with clean hands." "An examination of the record will disclose," they said "that the Bureau's counsel, inducted into the case at the conclusion of the first hearing, not only initiated a series of personal attacks and misrepresentations which were directed against protestants' witnesses and counsel alike during the hearing, but without provocation on the part of the protestants continued it throughout the Bureau's brief. The protestants in their principal brief chose to ignore the treatment accorded their witnesses and counsel throughout the hearing rather than dignify the clearly objectionable practice of Bureau's counsel by making it an issue in the case. However, the Bureau's brief was found to be only a continuation of the same offensive tactics which had been employed throughout the hearing, thereby forcing an issue bearing upon the conduct of Bureau's counsel, into the case, and the protestants submit that it is only legitimate and proper criticism by the protestants contained in their reply brief against these offensive practices on the part of the Bureau's counsel to which the Bureau now takes exception in its motion to strike from the record the reply brief for protestants.

"Had the Bureau been content to devote itself to answering the carrier's principal brief, a motion to strike would have been uncalled for. However, the Bureau having elected to intersperse its presentation and argument on the facts with personalities and attacks directed against the motives, character, and reputation of the protestants' witnesses, officials and counsel there was no choice left protestants than to answer the Bureau's brief or move to strike it from the records. Preferring to answer the Bureau's argument on the merits of the case, as well as to meet the personal attacks contained in the Bureau's brief, the protestants elected to reply to the Bureau's brief."

WHAT IS BELIEVED to be the first collision between a speeding train and an airplane occurred at Bromberg, Poland, recently. A test airplane, belonging to the military aviation school, incurred a motor defect and was forced to land on the railroad tracks. Just as the plane was alighting, a Cracow-Danzig express appeared and crashed into the airplane. No casualties resulted.

THE KANSAS CITY SOUTHERN has applied to the Missouri Supreme Court at Jefferson City for a writ of certiorari in a suit to test the Missouri state income tax law as it affects incomes earned outside the state. The railroad seeks a review of the action of the Jackson County Board of Equalization in assessing the railroad company on its entire earnings. The railroad's earnings for the entire system were \$1,700,000 while the Missouri earnings were but \$400,000.

Motor Transport Hearings Ended

Final testimony in I. C. C. investigation taken at Washington

THE Interstate Commerce Commission's investigation into motor transportation in the United States was brought to a close by the hearing at Washington, D. C., beginning October 25, where Commissioner Esch and Examiner Flynn who have had the investigation in charge heard the testimony of railway and other witnesses. The hearings which had previously been held at 12 cities in all parts of the country had been participated in by 391 witnesses, said Commissioner Esch. The number of exhibits filed totaled 377 and 4,604 pages of testimony were taken.

Referring to the statement frequently heard at the earlier sessions that regulation of the truck at this time would not be wise on account of the infancy of the industry, Commissioner Esch gave it as his personal opinion that regulation might be most desirable at this time for that very reason. The industry should not be too fixed in its ways before the guiding hand of regulation was applied, he said, adding that the regulation of the railways would have been an easier task for the Commission if it had been effected sooner.

H. M. Adams, vice-president in charge of traffic of the Union Pacific, was the first railroad witness. He testified that the Union Pacific is an operator of buses at two points—Zion National Park, where buses extend the rail service to inland points in the park, and between Walla Walla, Wash., and Pendleton, Ore., where two passenger trains have been replaced by motor buses, making two round trips daily. On this line tickets for transportation by bus or by the trains still in service are interchangeable. The Zion Park line has proved valuable as a stimulator of business, Mr. Adams said. The Union Pacific is also considering the replacement of local trains at other points on its lines with motor buses.

Mr. Adams predicted a still greater development of highway transportation. Buses and trucks will spread as the network of improved highways is extended, he said. He deplored the fact that bus and truck lines almost without exception have failed to extend into new fields to act as feeders to railways but have invaded instead areas already served, to the detriment of the railways' revenues. The Interstate Commerce Act provides, to protect the revenues of the railways, that no new lines to compete with existing lines may be constructed without the permission of the Interstate Commerce Commission. He urged that similar restriction be placed upon bus and truck lines.

The decrease of 85 per cent in ticket sales on the Union Pacific's Omaha, Nebr.-Fremont line in the 1917-1925 period was cited as evidence of the loss in passenger business caused by motor vehicles. On the system as a whole, passenger revenues decreased 27 per cent, the number of passengers carried decreased 61 per cent, the number of passengers carried one mile decreased 44 per cent and the average distance each passenger was carried increased 42 per cent in this same period.

Local transportation of l.c.l. freight has also declined, Mr. Adams showed. For hauls up to 50 miles, the tonnage of l.c.l. freight handled decreased 66.5 per cent in the period from 1917 to 1924. The decrease in hauls of 51 to 100 miles was 21.8 per cent and that in hauls of 101 to 150 miles, 13.6 per cent.

Under cross-examination, Mr. Adams said that the business handled by the railways has always shown a definite tendency to increase from year to year, but that competition from motor vehicles has retarded this normal increase.

He quoted from a report he had rendered his management on truck transportation in which he had said that regulation of trucks would not diminish competition from this source but that it would have the effect of consolidating existing truck lines into larger, stronger companies. Truck transportation is bound to increase and extend its scope, he said. Regulation would stabilize rates and service and protect the public in the event of injuries or damage.

Asked whether the Union Pacific plans to operate trucks, Mr. Adams said that the matter is being given careful consideration but that no decision one way or the other has been reached. The Union Pacific cannot afford to lose its short haul business, he said.

The railroads would not get back much of their lost business if regulation were instituted, Mr. Adams believed. Regulation might prevent further greater losses but it would not in the long run curtail the economic development of highway transportation. Regulation, he said, would aid in the co-ordination of railway and highway transportation. He stated his belief that the railroads would enter extensively into bus and truck operation if regulatory laws were put into effect.

Mr. Adams held that the argument that trucks should not now be regulated is unsound. He also disapproved the opinion that there should be one sort of regulation for trucks and another for buses.

The number of passengers carried in one day from Erie railroad points in New Jersey to New York by motor bus was found to be 7,960, a check he had had made showed, testified H. A. Taylor, general solicitor of the Erie. Discussing bus traffic further, he said that the buses carry very few passengers before 10 a. m. but that after that hour their business increases. Losses in passenger business by the Erie have been confined to those passengers paying full rates rather than commutation passengers.

J. J. Ruster, traffic manager of the Chamber of Commerce of Camden, N. J., and J. I. Tierney, secretary of the Manufacturing Chemists' Association, testified that their organizations do not favor truck regulation, although the former said that bus regulation was desired. Mr. Tierney said that those he represented favored patronage of trucks on account of the superior service they render. He disclosed, under the questioning of Commissioner Esch, that the packing of inflammable materials for truck transportation was not of the standard fixed by the Bureau of Explosives to apply to rail transportation.

Joseph Crawford, supervisor of transportation of the City of Newark, N. J., spoke in favor of the regulation of interstate buses. Such buses come and go as they please without regard to schedules, he said. As evidence of the instability of such companies, he said that 5 weeks ago there were 33 interstate bus lines operating through Newark but that there are now only 14. Of these, only three are responsible organizations, he declared. His

city does not object to the use of its streets by interstate buses, Mr. Crawford said, but it does want the right to designate which streets buses shall use in passing through the city.

S. A. Markel, chairman of the legislative committee of the Bus Division, American Automobile Association, introduced a proposed bill to regulate motor buses only. This bill embodied the principal features of the Cummins bill, Senate 1734, which was pending in the last session of Congress, with certain exceptions, none of which was important except the omission of trucks from its scope. The proposed bill would empower the Interstate Commerce Commission to regulate the bus, through the medium of the state commissions.

Charles F. Martin, statistician of the North Dakota Board of Railroad Commissioners, submitted a statement regarding motor transportation in that state which showed that in 1926 the mileage of highway transportation lines competing with railways was 1,118. The bus is not entirely dependent for its passengers on former users of railroad trains, he said, and cited as proof a comparison of the local passenger traffic carried between Fargo and Jamestown in 1925 and 1924. In the latter year the number of passengers carried by railroads between these points was only 372 less than in the earlier year, while the buses carried in the latter year 4,664 more passengers than they did in the year previous.

H. S. Martin, general counsel of the American Railway Express Company, stated that his company has suffered a loss of business of \$10,000,000 since 1921, due to competition from motor trucks. Much of the competition has been from truck lines operating as common carriers, he said. All kinds of commodities formerly handled by the express company have been taken over by the trucks. Mr. Martin declared in favor of regulation of the trucks, saying that the same power of regulation vested in the Interstate Commerce Commission should affect all forms of transportation. The Highway Commission of West Virginia favors the regulation of both buses and trucks engaged in interstate traffic, testified F. A. Sanders, supervisor of transportation of the commission. He explained in detail the jurisdiction exercised by his commission over the intrastate carriers in West Virginia.

McDonald Favors Regulation

Thomas H. McDonald, chief of the Bureau of Public Roads, strongly advocated regulation of highway carriers, both bus and truck, in order to make it possible for the railways to use these transportation tools to supplement their rail service. The railroads, he said, ought to have the necessary legal power to use buses and trucks. Bus regulation, said Mr. McDonald, might well be carried out by federal agencies under laws passed by Congress, and trucks should be regulated, in instances where they cross state lines, by means of laws empowering the states themselves to perform this function. This would, he said, solve the important questions arising from the use of state facilities, such as roads, by vehicles operating in interstate service.

The hearings were concluded on October 27 with a statement by Alfred P. Thom, general counsel of the Association of Railway Executives, outlining the position of the railways generally, although he said they were not entirely unanimous. Mr. Thom advocated a plan of regulation of interstate highway transportation by motor vehicle by which Congress would utilize state authorities as administrative agencies to carry out principles laid down by the federal government, although he said that Congress may not, under the constitution, delegate legislative power. Mr. Thom also contended that regulation could be extended to the so-called "con-

tract" carriers, because the power of Congress extends to the regulation of commerce, not merely to common carriers, but he suggested that the extent of such regulation should be determined by public authority.

Mr. Thom said that it was the belief of those he represents that regulation should extend to the rates of common carriers and an attempt to insure financial responsibility and continuity of service, but that discretion should be left to the Interstate Commerce Commission to decide to what extent accounts should be controlled. As to contract carriers, he said that a thorough study should be made as to how far the system of regulation should be applied but that there should be registration and some effort should be made to determine their proper economic sphere with recognition that they are on a different basis from those who use the public highways not for hire. Also an excise tax or fee should be exacted as nearly as possible commensurate with the use.

Mr. Thom said he wished to deny the impression that the movement for the regulation of motor vehicles originated with the railways and is being pushed by them for the purpose of selfishly protecting themselves. He said the pioneer movement for regulation was inaugurated at a conference in Chicago in May, 1925, called by the National Automobile Chamber of Commerce, at which various interests were represented. As representing the position of the railways he said he was authorized to repeat what he had said in a recent address at Boston (*Railway Age*, October 23, page 784) including a statement that "the railways will be no party to an effort to strangle and destroy, under the guise of regulation, a new agency of transportation which the public wants and which can serve it usefully. Whatever is done must be done to improve transportation, not to impair or destroy it."

One of the points that Mr. Thom emphasized was that public authority should decide whether or to what extent the new agency of transportation should be substituted for that of the railroads, in the case, for example, of a branch line which could not continue to operate if a large part of its traffic were to be taken away from it. Pointing out that commerce by steam railroad is predominantly national and must be regulated by an authority capable of taking a comprehensive view of the national situation, Mr. Thom said that motor vehicle transportation on the other hand is predominantly local and if there were no impediments he would advocate state regulation. However, the Supreme Court has held that a state cannot forbid interstate commerce on its highways and it is necessary to make provision for the regulation of interstate commerce. It is possible for Congress to leave a large part of the field to the states while making use of local authorities in administering its policy, on the same principle as that of the interstate commerce act, under which Congress has laid down certain principles and the Interstate Commerce Commission determines when a situation is in violation of those principles and what rate is reasonable.

Mr. Thom was cross-examined at some length by W. H. Chandler, manager of the transportation department of the New York Merchants' Association and by C. C. McChord, representing the National Automobile Chamber of Commerce, who challenged the statement that the movement for regulation of motor vehicles originated with that organization.

J. W. Drake, assistant secretary of the Commerce Department, read a paper on the great economic value of motor vehicle transportation and a statement was read on behalf of T. C. Atkeson, Washington representative of the National Grange, opposing federal regulation except to the most limited extent.

New York Central Plans Elaborate Station for Buffalo, N. Y.

Work begun in April on extensive modern layout is expected to be completed by December, 1928

AFTER many years of agitation, study and planning the New York Central and the City of Buffalo have reached an agreement and work has begun on the construction of a new passenger station at Buffalo, N. Y., which with all of its auxiliary facilities will involve an expenditure of approximately \$14,000,000. The site of the new station, which covers an area of approximately 30 acres, is directly north of the New York Central main line in what is known as East Buffalo, about 2½ miles east of the present Exchange street station which lies on the southern limits of the main business section of the city.

The present station at Buffalo is a brick structure about 600 ft. long by 65 ft. wide, lying close to the south property line of Exchange street between Ellicott street and Michigan street. The front of the station is two stories high, the second story being used for the most part by offices. The entire first floor is occupied by the waiting rooms, a lunch room, ticket offices, news stands, lavatories, etc. The main entrance to trains is located centrally in the waiting room and leads by means of stairs to a concrete subway which extends under 11 of the 12 short station tracks. The station tracks are served by low board platforms covered by frame butterfly type sheds.

The limited track layout at the present station has been the source of some of the most difficult operating problems on the New York Central. The station tracks have direct connection over four tracks, two eastbound and two westbound, to the lines east, and connections to the west over two tracks, one eastbound and one westbound, over which the Michigan Central and the Canadian National enter the station.

For many years these facilities adequately served the railroads using them and the city, which in the middle of the nineteenth century was one of the important western termini of the railroads of the country. With the extension of the railroads westward, however, through travel increased and with no through outlet from the station to the west, southerly around the east end of Lake Erie, the line of the Lake Shore railroad was brought to a connection with the main line of the New York Central in a wye at a point about 1½ miles east of the station. From that time on, through trains to the west and east, stopping at the station, were required to head around the wye and back into the station, or head into the station and back out. The location of the station does not affect the operation of the tenant roads in this respect, the Pennsylvania and the Canadian National using the station as a terminal, while the Michigan Central operates through the station, using the New York Central's Niagara branch as an outlet to the north and west.

Agitation for a new station at Buffalo has existed for many years. Exactly when the present station was constructed is a matter of uncertainty, the date being closely connected with the early days of railroading in Buffalo when the present New York

Central lines in this territory were under the control of the Buffalo & Attica railroad. Serving from these days in the latter half of the nineteenth century, when the population of Buffalo ranged from about 50,000 to 300,000, these old facilities, slightly enlarged and improved, still stand as the main gateway to the city with a population now exceeding 538,000. Hemmed in by the rapidly growing business section, which for many years centered around the station grounds, expansion of the facilities has been greatly hampered, and furthermore, extensive improvements have been delayed by the constant agitation for a new station on the part of the city.

Actual Work Began in April

Co-operating with a newly formed grade crossing and terminal commission in Buffalo, the New York Central and the city united in a general plan of location and development which culminated in an agreement on December 22, 1925, immediately following which preliminary work began. The site selected is a section of land covering an area of approximately 30 acres. On this site, away from congested traffic and unrestricted in limits of development, the new station is to be erected, accompanied by an effective track layout, auxiliary facilities and a rearrangement and widening of streets which will provide a spacious and attractive entrance to the city.

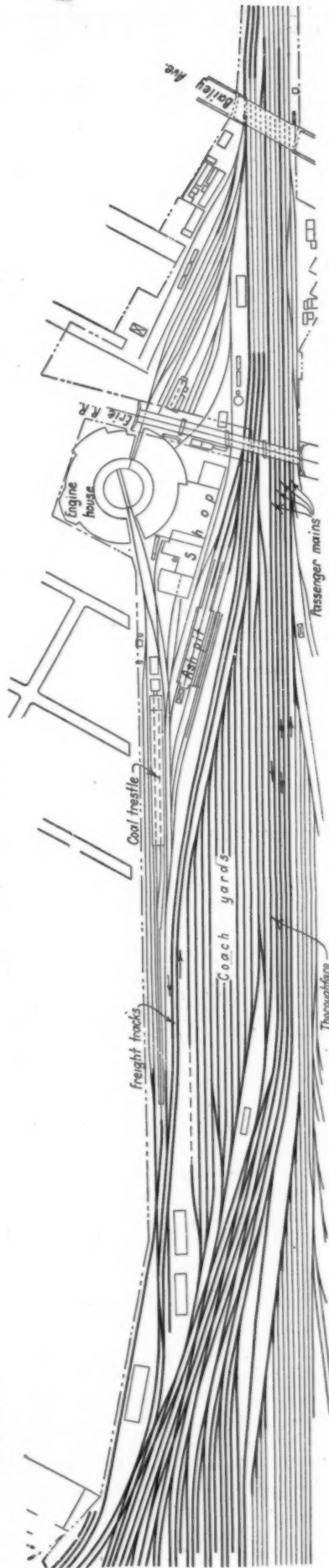
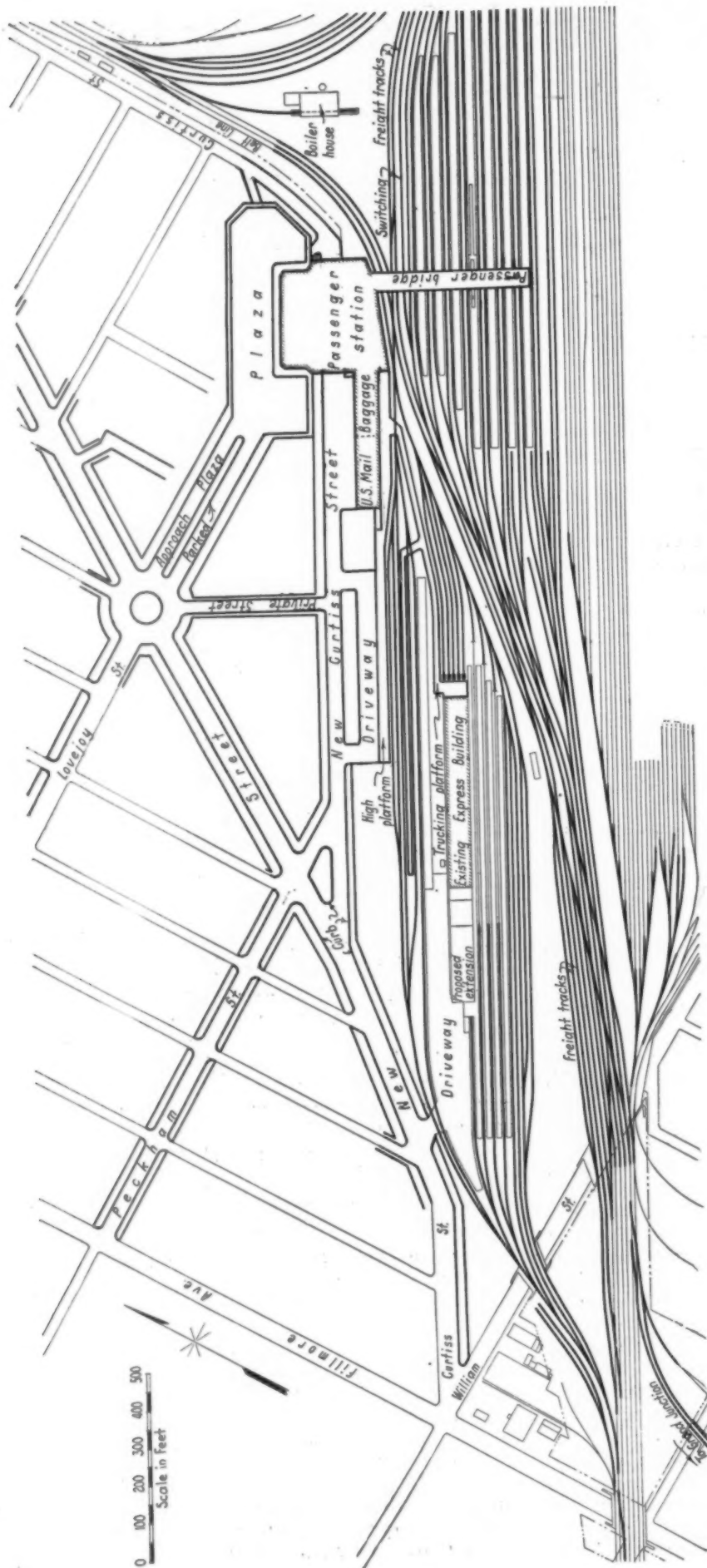
Beginning in April, the first problem in connection with the project was the acquisition of about 180 separate pieces of property, occupied by frame houses inhabited by from one to four families each, and for the most part owned by people of Polish origin. This was by no means a small problem as considerable difficulty was experienced in convincing the property owners, many of whom could not speak English, that their home sites should give way to the new civic improvement. In a large measure, however, this has been accomplished, most of the homes have been razed and the development work on and about the station site is proceeding rapidly.

Rearrangement of Streets to Provide

Easy and Attractive Approach

Specifically, the plans provide for the rearrangement of streets, involving the construction of new streets, the widening of others and the construction of one seven-track under-grade crossing; the construction of the new passenger station with the most modern facilities and conveniences for the handling of passengers, mail, express and baggage; and an extensive track layout with station tracks, coach tracks, engine tracks, express car tracks and numerous auxiliary tracks, which will make the new station one of the fastest switching points in the country.

With the new station to be located at the foot of Lovejoy street, facing north, the approach is to be made easy and attractive from several directions by the widen-



General Layout of Tracks and Streets at the Site of the Proposed Passenger Station at Buffalo

ing of Lovejoy and Peckham streets, the relocation of Curtiss street 200 ft. north of its present location, and the construction of a new wide boulevard connecting the east end of Curtiss street, near William street, with Broadway. This new street will replace the abandoned embankment of the old main track of the West Shore railroad and will connect two of the main arteries from the center of the city. The traffic to the station from the main residential section of the city, which lies almost directly north of the station, will for the most part come over Fillmore avenue, a main through north and south thoroughfare about one-third of a mile west of the station, to Lovejoy street and thence to the station. A plan has been worked out which will separate the approach to the station and departure from it, relieving traffic congestion and at the same time affording an attractive layout with parked areas to enhance the station approach.

With the view of further facilitating access to the station by separating passenger car traffic from mail, baggage, express and commercial trucking to the station facilities, a new private street is planned, connecting the parked intersection of streets in front of the station with the new Curtiss street which in turn will extend eastward to serve the mail and baggage facilities to be located adjacent to it and continue under the station building to serve it also and to provide an outlet to the north. Old Curtiss street is to be shut off west of the station and used exclusively for access to the present large express facilities lying adjacent to it.

New Station to Be a Large and Attractive Structure

The new station building will be a steel frame structure faced with an attractive brick. The station proper as planned will be 6 stories high with a 12-story tower surmounting the main entrance facing down Lovejoy street.

The main entrance and main floor of the station, including the passenger concourse, waiting rooms, dining room and all other passenger facilities, are to be above the tracks and approached by the grading of Lovejoy street to an extensive plaza which will surround the front of the station building and provide adequate space for receiving and the departure of private automobiles and taxicabs. Beneath this plaza on the street level at the east end, provision is made for a trolley loop to serve incoming and outgoing passengers.

The track level floor, with the exception of that portion occupied by the extension of Curtiss street as it passes under the station, will be occupied for the most part by storage rooms for records and for the commissary department. The second mezzanine floor provides for offices along the front and sides of the building in that area not occupied by the upper part of the entrance and exit lobbies and the passenger concourse. The upper three stories, extending across the front of the station, as well as the floor areas in the tower, are to be used for railroad offices. Additional office space is provided in the main floor and second mezzanine floor of a long wing to extend west from the rear of the station building proper, the track level floor of this unit to be used as baggage and mail rooms. All of these units are to be heated by a new central boiler house to be located within the wye of the inner belt line.

Train Concourse to Extend Over Tracks

The general plan of the main station floor has been laid out with great care to afford passengers the least inconvenience and travel to the various station facilities

and to and from trains, and also to segregate as far as possible the currents of incoming and outgoing passengers. Access to the tracks is to be gained through a wide enclosed train concourse extending over the station tracks at the main floor level, and provided with settees for outgoing passengers awaiting the arrival or departure of trains. Exits from this concourse are to be provided directly above each track platform, where bulletin boards will announce the time of trains and where passengers will be passed through gates. These exits are planned on one side of the concourse only, and will lead to the platforms by means of stairways. Approach to the concourse from the platforms will be from the opposite side where both stairs and ramps will be provided.

The station track platforms, of which seven are planned at the present time, are to be of concrete and of the low type, this type to be used because of the large amount of switching and inspection of equipment that will take place at this point. The platforms will be 22 ft. wide and from 850 ft. to 1,200 ft. in length, and will be covered with steel and concrete butterfly type sheds. They will serve both for passengers and for the trucking of baggage and mail, exit for the trucks to be provided by means of ramps which will be located directly beneath the passenger ramps to the train concourse.

Elaborate Track Layout

to Speed Switching Movements

The track layout in connection with the new station, unrestricted by space limitations, will involve the renewal of approximately 30 miles of tracks, the construction of about 31 miles of new tracks and the use of 46 slip switches and 180 turnouts. Present plans contemplate the construction of 14 station tracks, to be flanked by seven platforms, which it is felt will serve immediate requirements, although ultimate plans provide for 10 additional station tracks to be constructed as requirements demand. All of the station tracks within the limits of the platforms will be laid on concrete slab foundations without ballast, and adequately drained so as to preclude maintenance and permit ready cleaning by flushing.

In order to expedite the changing of locomotives and switching movements, which to a more or less extent will accompany the arrival of practically every train at the station, the station tracks have been connected in pairs at both ends so that minimum interference will be afforded to movements on the other station tracks. Between the outer platform tracks, at each end, short tracks will be constructed parallel to the platform tracks, stubbing at the ends of the platforms but of sufficient length to hold in waiting assigned power, or coaches, diners, sleeping cars or other equipment to be added to trains arriving at the station. These tracks will also provide space for setting out equipment and in either case will minimize the switching time and distance traversed by road power. In addition to these short tracks for speeding up switching movements, a coach yard of 11 tracks is planned just east of the station which will permit the holding of equipment in close proximity to the station and enable the rapid make-up of trains. Live engine storage tracks are planned at both the east and west ends of the station and between the station and the platform tracks where power can be held in waiting and coupled to its train with minimum delay as soon as incoming power has been released. For the present it is planned that the three engine terminals already in this vicinity will handle all of the power

originating and terminating at the station. However, plans are under consideration which contemplate the combining of these facilities into one large terminal at a suggested location at some distance east of the station layout.

Large Track Layout to Serve

Mail and Express Facilities

The tracks next to the station will be the three freight tracks of the west leg of the New York Central's inner belt line wye, two of which will connect into two main line through freight tracks which will skirt the inner side of the station tracks. All of these tracks will be bridged by the overhead train concourse and thereby afford no interference to passengers. West, and immediately adjacent to the platform tracks, provision has been made for a series of tracks for handling mail and express trains, and for connections to the tracks already serving the existing large express facilities which also are being altered and extended considerably. All of these tracks will have connections on the west end and will pass over William street, as does the main line, on a solid deck plate girder bridge. With such a track layout serving the new Buffalo station facilities, the most expeditious handling of all passenger, mail and express trains is expected under ideal operating conditions, with greatly improved service to the public.

Under the present plans, completion of the new station is expected by December, 1928. The program of work undertaken this year includes the purchase and clearing of land, the laying out and grading of streets, the revision and installation of water, sewer, telephone, telegraph and power lines to the new facilities, the alteration and extension of the present express facilities, and the alteration and construction of a large part of the track work.

The work in connection with the new station is being carried out under the general supervision of G. W. Kittredge, chief engineer and J. W. Pfau, engineer of construction, New York Central (Buffalo and east) and the actual construction is in charge of W. F. Jordan, principal assistant engineer.

Union Pacific Train Control Approved

WASHINGTON, D. C.

THE Interstate Commerce Commission on October 27 made public a report by Division 1 approving the installation of the Union Switch & Signal Company's automatic train-control system on the third subdivision of the Wyoming division of the Union Pacific from North Platte to Sidney, Neb., 123 miles of double track, under the commission's second train-control order. There are 34 locomotives equipped. This installation is a continuation of the system installed between Sidney, Neb., and Cheyenne, Wyo., under the commission's first order.

The cost of this installation as reported by the carrier covering wayside equipment and locomotives as hereinafter described, is as follows:

Roadside Equipment:	
Total cost of train control installation, less power lines, power apparatus, signals, or cost of change in existing signal system less salvage.....	\$89,217.36
Total cost of power lines and power apparatus, less salvage...	115,845.84
Total cost of changes in existing signal system, less salvage...	23,415.95
Locomotives:	
Total cost of locomotive equipment installed.....	92,395.73
Total cost of installation.....	\$320,874.88

As a result of this inspection and test it was found that the installation meets the requirements of the commission's specifications and order.

Maintenance, Tests and Inspection

The report includes the following as to maintenance, tests and inspection:

1. As stated in our report upon the inspection of this carrier's installation on the fourth sub-division of its Wyoming Division 109, I. C. C. 147, it is understood that there have been no cases of freezing of the pneumatic portions of this device during the last two winters and that the housings provided have so far been found satisfactory. These housings, however, only protect the application group, and in view of the importance of the matter, there should be no relaxation of vigilance in watching this feature until sufficient experience has been had to prove beyond question that the protection afforded is entirely adequate.

2. As in the first installation, a high standard of inspection and maintenance was found to obtain in connection with both the locomotive and the roadway equipment of this second installation. The instructions in effect at the time of the inspection relative to tests, cleaning periods, seals, and locks should be consistently observed and continued.

On July 20th, extra 5028 westbound received an undesired automatic brake application while passing signal 3335 indicating caution, at a speed of 9 miles per hour after the change in indication from green to red had been properly acknowledged. This was due to a long delay period, the stop reservoir having been charged and discharged before the relay valve shifted. When later the relay portion and magnet valve were inspected and tested at Cheyenne, they operated satisfactorily. Presumably dirt or pipe scale which was self-clearing caused the long delay time. At signal 3917, indicating caution, an automatic brake application was prevented by a double acknowledgement, the necessity for which was due to the same difficulty. This failure serves to emphasize the importance of preventing oil, dirt, scale, etc., from getting into the valves and other parts of the train-control device.

3. When the train-control feed valve on locomotive No. 2865 was adjusted to maximum pressure to test the effectiveness of the train-control safety valve, pipe 4 pressure increased from 70 to 100 pounds and the blow-down time increased from 39 to 57 seconds. The safety valve operated but did not relieve the excess pressure. A similar test on locomotive No. 2492 resulted in pipe 4 pressure increasing from 70 to 82 pounds and the blow-down time increasing from 40 to 47 seconds. The train-control safety valve operated but did not relieve the excess pressure.

Since the tests to determine the efficiency of the safety valve in preventing accumulation of excess pressure in the control system demonstrated that it could not, under all conditions, prevent an appreciable increase in this pressure, and since an increase in control-system pressure causes an increase in the delay time of automatic applications, this should be fully considered in connection with the factor of safety used in the establishment of braking distances.

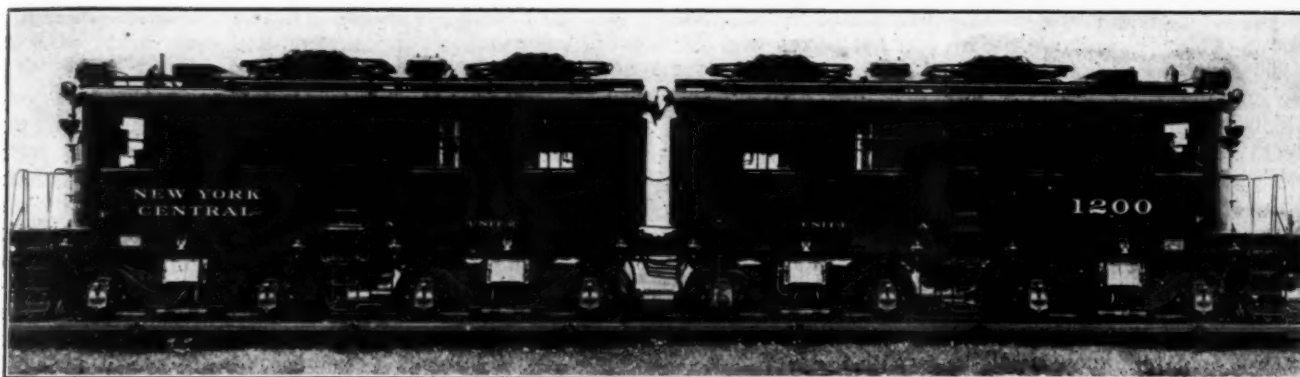
4. As in the report upon the first installation, the shunt circuit used in this installation also, for imposing a restricted speed limit when a switch is open, is passed with the understanding that the arrangement of this shunt circuit at cross-over and turn-out switches including the lead wires, bonding, and switch-circuit controllers, must be so maintained that an imposed low-speed limit due to an open switch shall not be released at such distance from the open switch as to permit the speed of the train to be so increased as to introduce an element of danger. Should this arrangement be found impracticable to maintain, other means of protection must be applied.

5. The automatic cut-in feature as installed is designed and operated on the open-circuit principle, and while the cab indication is intended to apprise the engineman of a failure of the device to cut in automatically, it involves reliance upon the human element, and where necessary to depend upon it, should be supplemented by such additional check as may be practicable. The plan in effect on this installation appears to be reasonably adequate and should be continued.

6. It is understood that the cut-in loop on the Colorado Division track at Julesburg is to be relocated at a point braking distance from the signal. This should be done.

7. The type of fouling protection employed at turnouts and crossovers should be given careful consideration with a view to providing increased protection if practicable.

8. Consideration should be given to the question of providing lightning and static protection on leads from the rails to the track relay coils and contacts. The necessity for this was emphasized by the conditions found in the track relay at signal 3633, and in that for track circuit 3917 D on July 13, 1926, following the storm of that date.



General View New York Central Class R Electric Freight Locomotive, with a 1-Hour Rating of 3,320 Horsepower

New York Central Electric Freight Locomotives

Two-unit locomotive is designed to haul 3,000-ton train at 32 miles an hour

By Edwin B. Katte

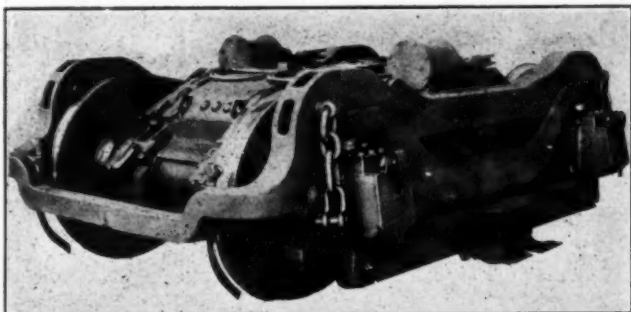
Chief Engineer, Electric Traction, New York Central

THE New York Central's new electric freight locomotives are designated as Class R, and will be used for hauling through freight on the electric division and West Side freight tracks in New York City and vicinity.

The locomotives differ from any previous New York

Each unit consists of a box type cab: mounted on two four-wheel swivel trucks, not articulated. The floor frame is a single steel casting. This use of large steel castings for underframes and truck frames is the most notable mechanical feature of this locomotive and simplifies the construction by eliminating a great number of bolts, nuts, and small parts. Extending longitudinally through the middle of the underframe casting is a large duct for conveying air from the blower above, through the centerplates to the traction motors. Lugs for lifting the cab from the trucks, buffer beams with push pole pockets, convenient attachment for couplers, for truck safety chains, etc., and side steps, are cast integral.

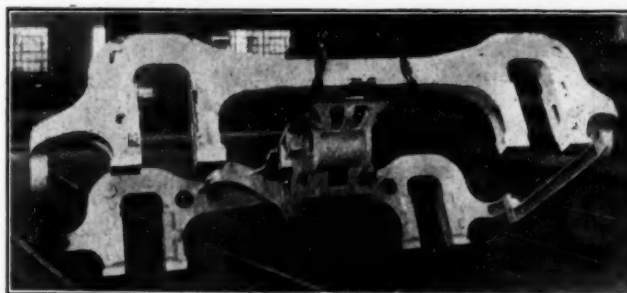
The truck frame is an integral steel casting, and embraces side frames, end frames and transom. The



Motor Truck Assembly

Central electric locomotives in that they are built in two nearly identical units. The units are connected by a special coupling and can be separated for shop purposes, but are numbered alike and will not be separated in service. The designed weight was 170 tons; the actual scale weight of the first locomotive is 353,600 pounds, all on the drivers.

PRINCIPAL DIMENSIONS AND WEIGHTS OF THE LOCOMOTIVES	
Length, coupler faces	68 ft. 2 in.
Length, each cab	29 ft. 0 in.
Length, truck centers	16 ft. 0 in.
Length, spread of third rail shoes	49 ft. 0 in.
Height, floor	5 ft. 4 1/4 in.
Height, roof	12 ft. 7 5/16 in.
Height, trolley retracted	14 ft. 7 in.
Width, cab sheets	9 ft. 10 in.
Width, overall at the eaves	9 ft. 11 1/2 in.
Wheelbase, total	55' 3 in.
Wheelbase, each unit	24' 3 in.
Wheelbase, truck	8' 3 in.
Weight, total	353,600 lb.
Weight, per axle	44,200 lb.



Steel Truck Side Frame Casting

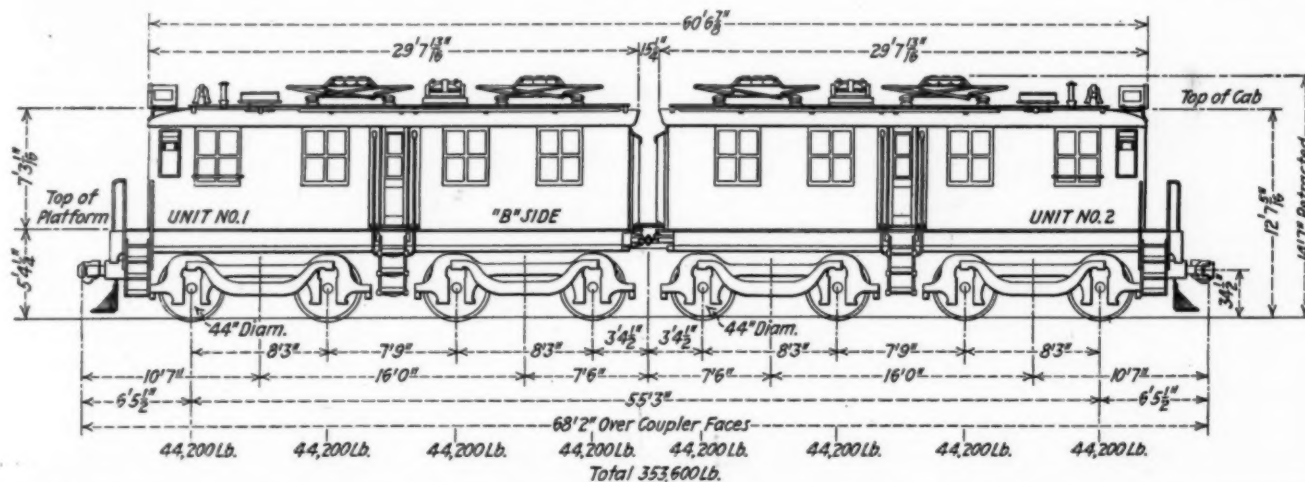
transom is cast hollow, to conduct the air which passes downward through the large centerplate opening to the motors. Lugs for spring nose suspension of the motors are cast on the transom. The cast frame is supported at the middle of each side on a semi-elliptic spring the ends of which are carried in cast steel spring hangers, swung between two equalizer bars. The equalizer bars are cushion supported on each journal box by a nest of

located just above the floor, below the control apparatus in this compartment and are ventilated through flues to the roof. The estimated height of the center of gravity is 59 inches above the top of the running rails.

The control apparatus is of the PCL electro-pneumatic type. The contractors, reversers and series-parallel switches are operated by air cylinders. The air for operating each cylinder is controlled by a magnet valve

on each side for operation on the standard New York Central third-rail; also with four pantographs which will collect current from either the overhead third-rail at a height of 15 ft. 3 in. or on the contemplated overhead construction on the West Side tracks at a height of 17 ft. 4 in. A bus line between units was not considered necessary.

The locomotive is protected from lightning by an



Outline Drawing Showing the General Dimensions and Weight Distribution of the N. Y. C. Class R Electric Locomotive

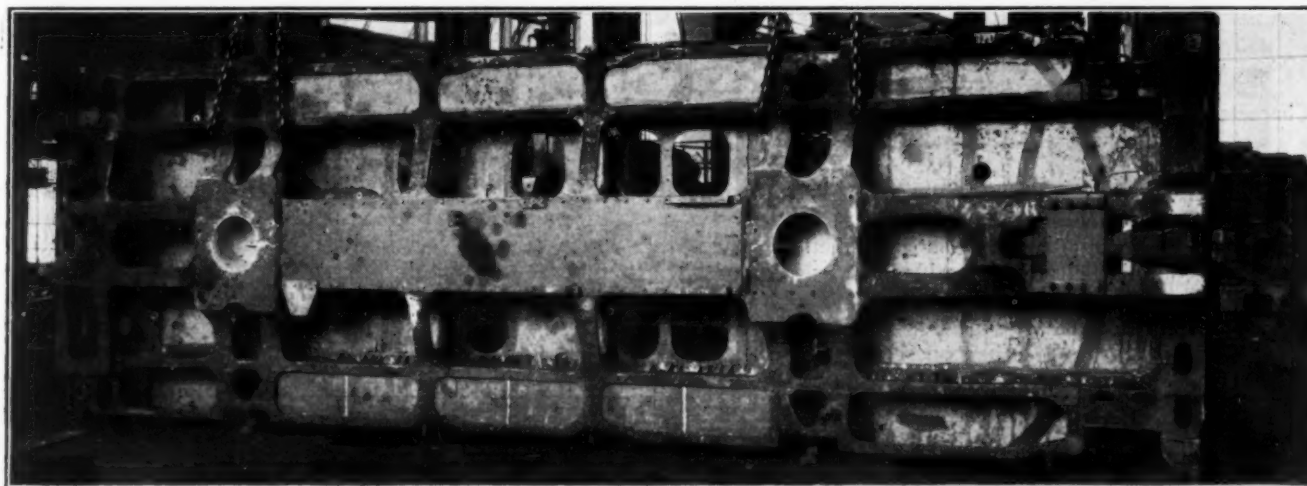
energized from the master controller. The series-parallel switch consists of a group of ten contractors operated by a cam shaft controlled by four magnet valves.

A 32-volt, 150 ampere-hour storage battery, which is charged in series with the blowers, is used to furnish current for the motor control circuits, lights, and control of all auxiliaries. Both units are wired alike except for the battery and battery accessories.

All the auxiliaries, including the pantographs, blowers,

aluminum cell lightning arrestor. The motor circuits are protected by a high speed circuit breaker which opens on excessive current and can be tripped by an overload relay in each motor circuit or by a switch placed convenient to the engineman.

The locomotive is capable of operating with a train on a curve of 230 ft. radius, and of running at a speed of 60 miles an hour, and has under test with special gears been run at 86 miles an hour. The locomotive is designed to



Cast Steel Floor Frame

compressors and lights, are controlled by push button switches located convenient to each engineman's position.

A blower, to provide forced ventilation for the traction motors is located on each unit. A two-stage air compressor on each unit, having a displacement of 150 cubic feet of free air per minute, supplies air for the air brake system, motor control and auxiliaries, including pantographs, whistles, sanders, etc.

The locomotive is equipped with eight third-rail shoes

haul a train of 3,000 tons, of which 75 per cent of the cars are empties and 25 per cent 50-ton loaded cars, at a speed of 32 miles an hour with 575 volts at the motors.

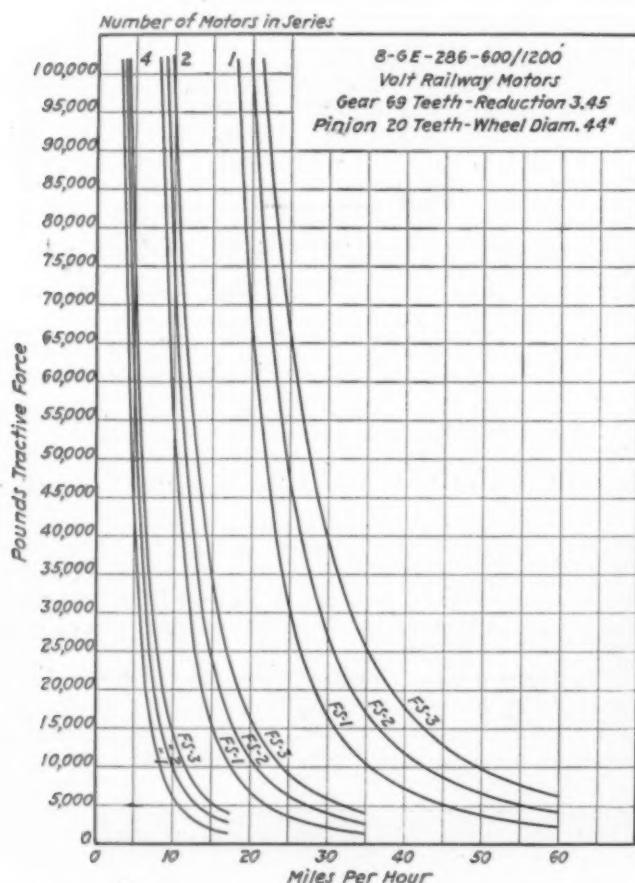
The service capacity of the locomotive was defined in the specifications by a requirement that in a continuous series of runs between Seventy-ninth street (West Side), New York and Harmon, hauling the train just mentioned and making four intermediate two-minute stops on each trip, accelerating at 20 per cent adhesion, and having a

layover of 20 minutes at each terminal, with voltage at 575, the temperature rise in the motors should not exceed 140 deg. C. measured by change in resistance, or 120 deg. C. by thermometer.

An acceptance test of one of these locomotives was run recently to ascertain whether the locomotive conformed to the requirements of the specification. A train of 108 cars, including cabooses, with the proper proportion of loads and empties, and weighing 3,006 tons,

was terminated after 9 hours, near the end of the second round trip, after making 95 train miles. The number of stops, exclusive of terminals, was 17. The maximum speed was 34½ m.p.h.. The amount of power consumed by this locomotive in hauling the 108 car train under the described test conditions was 26.3 watt-hours per trailing ton-mile.

The maximum motor temperature rise observed was 90 deg. C which, taking into consideration all the conditions of the test, indicates that the temperature rise would be well within the limit of 140 deg. named in the specifications.



Characteristic Curves of the N. Y. C. Class R Electric Freight Locomotives

was assembled. A caboose containing instruments to indicate and record voltage, amperes and speed, was coupled to the locomotive and the instruments connected into the locomotive circuits by cables carried temporarily over the roofs. It was intended to run three round trips with this train in about 7½ hours, but due to accidental uncoupling of cars and other operating delays the test

Integral Cylinder and Frame Casting, and Rivetless Tank

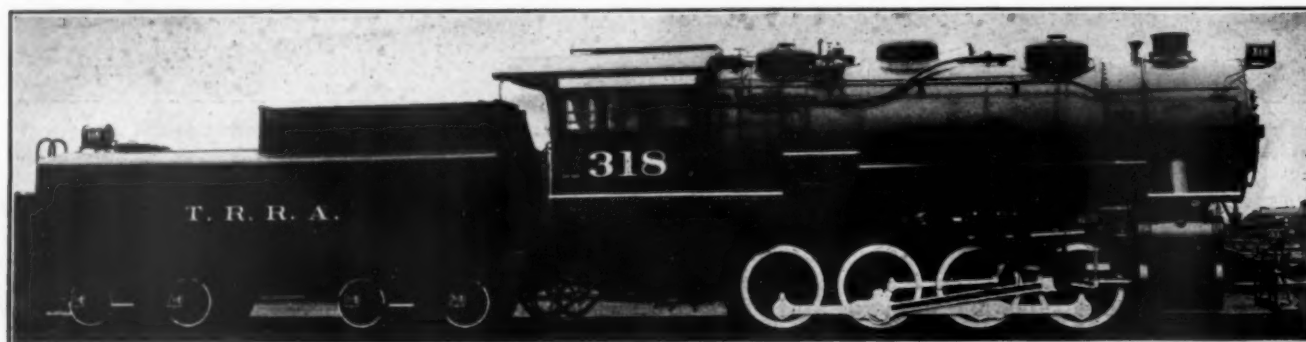
THE illustrations show two recent developments of interest on the Terminal Railroad of St. Louis, including a combined locomotive cylinder and bed frame casting made for this railroad by the Commonwealth Steel Company and a locomotive recently



Rear View Showing Absence of Rivets

built at the company's shops, the feature of which is a tender tank without rivets.

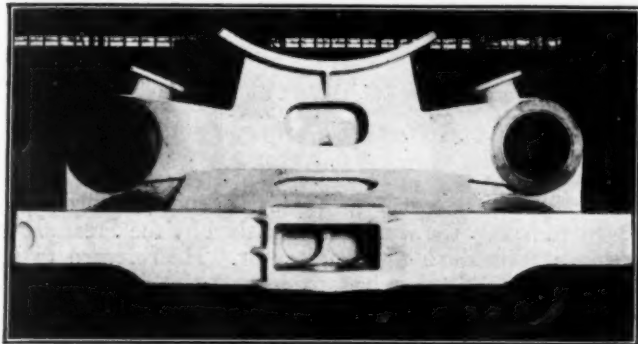
The new design of cylinder and engine bed in a single casting constitutes one more step in advance in the simplification of locomotive construction by reducing the number of locomotive parts and bolted or riveted connections. In this casting the deck, side frames, cross bracing, cylinders, steam chests, saddle and bumper beam are cast integral. This one-piece casting is said to



Switcher Built at Company Shops of Terminal Railroad of St. Louis—Tender Featured by Cast Steel Tank Bottom and Welded Seams

take the place of thirty parts in the former design, to be 6,500 lb. lighter and approximately four times as strong.

This locomotive, built recently at the company's shops, is designed for heavy transfer and switching service. It



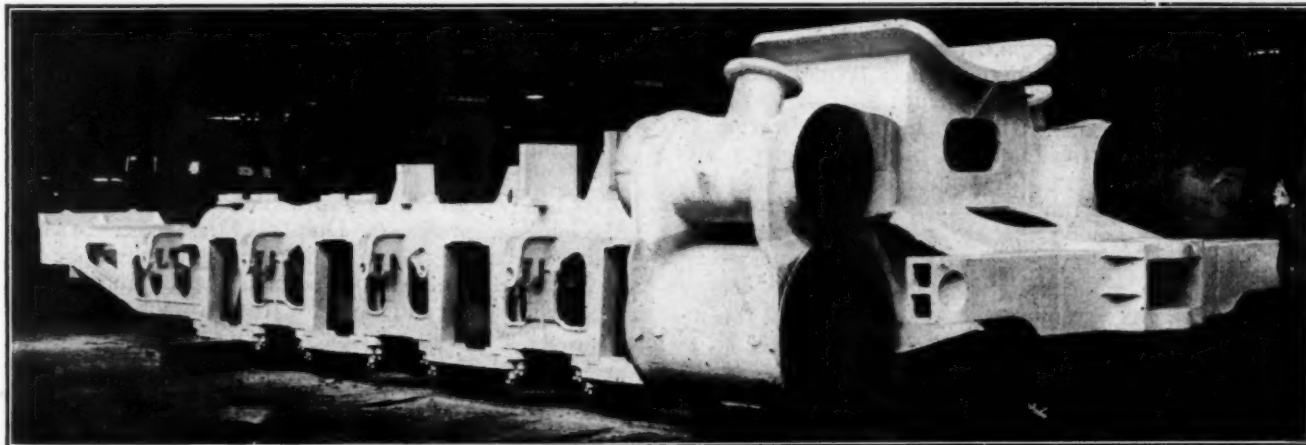
Front View Showing Both Cylinders, Which Are Cast Integral with the Bed Frame

has a total weight on drivers of 246,000 lb. and a tractive force of 60,000 lb. Switchers of this class on the Terminal Railroad of St. Louis are in practically 24-hour

without it becoming necessary to have the fires cleaned.

The main problem in designing large tenders for switching service involving backward as well as forward movement, is to construct them so that the view of the enginemen will not be lessened when backing up, and that essential element was particularly in mind in this design. Another objective was minimizing the dead weight, which is but 60,000 lb. With a coal capacity of 12½ tons and water capacity of 10,000 gal., the ratio of empty to load weight is therefore .357 or practically the lowest of any tender recently built.

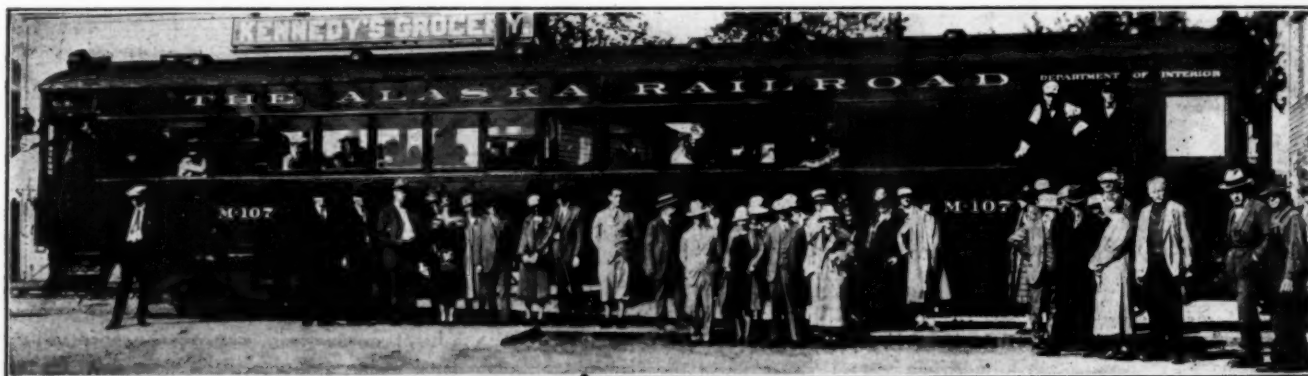
The increase of 20 per cent in water capacity and 15 per cent in coal space has been accomplished without increasing the height of the tender and without increasing its dead weight, largely as the result of using a cast-steel tank bottom weighing but 18,460 lb., which was briefly described on page 1155 in the April 24, 1926, issue of the *Railway Age*. The side sheets are welded to this cast-steel bottom, all of the seams, interior bracing, hand holds and other attachments also being welded. There is no riveting whatever in this tank, which is practically one piece above the trucks. The top is crowned and the edges rounded, the guard wing being left off for the purpose of preventing any slack coal or other refuse



Combined Cylinder and Bed Frame Made in a Single Steel Casting by the Commonwealth Steel Company for the Terminal Railroad of St. Louis

service and the engine design was developed with that point in mind. The engine, equipped with Hulson grates, requires cleaning of the fires at infrequent intervals, a number of switchers of similar design having run 30 days

accumulating thereon, starting corrosion and making renewal of the top necessary. Elimination of the wood decking and bottom plate of the cistern obviates the frequent renewal of these parts.



Brill Model 75 Gasoline Rail Car for the Alaska R. R.

Fifteenth Annual Safety Congress Held in Detroit

*Railroad safety men report progress—Future Success of
movement depends upon attitude of executives and officers*

THE education of railroad men in safety work has been carried on persistently for a long time and is resulting in a gradual reduction in the number of accidents. Reports of the many safety representatives attending the fifteenth annual Safety Congress of the National Safety Council at Detroit, Michigan, October 25 to 29, particularly those members of the Steam Railroad Section, indicate that the work is bearing fruit. The opinion of these men, however, is that railroad safety work has reached a crisis and that the future success of the movement will depend upon whether or not the higher executives and departmental officers can be thoroughly sold to the value of safety work as a vital factor in improving operating conditions on our railroads. It was pointed out that in all too many cases there exists an indifference to this movement and those charged with the responsibility of promoting safety do not hesitate to emphasize the fact that the influence of their work must necessarily be limited without the whole-hearted co-operation of executives, officers and supervisors. With this in mind this year's program of the Steam Railroad Section has been arranged to include a predominance of speakers from among the ranks of the higher officers representing the different departments in the hope that a better mutual understanding of the real significance of safety work may result.

That the education of the railroad employee as well as the public is bearing fruit is indicated in the reports from many roads which are able to show a substantial reduction in time lost by employees due to accidents. The efforts of the safety supervisors have instilled into the individual a personal pride in the safety record of his particular road and department with the result that he realizes his own responsibility in the elimination of carelessness—the cause of most accidents. The improvement indicated in many cases is, to a great extent, due to the decreasing tendency of men to absent themselves from duty for a greater length of time than the nature of an injury may actually warrant.

The prevention of grade crossing accidents still remains a vital factor in safety work. It is gratifying to observe that the reports on grade crossing accidents indicate a material improvement in the situation considering the increase in motor car registration. Realizing that the eventual solution of this serious problem can only be brought about by a broader education of the public, the National Safety Council and particularly the Steam Railroad Section has increased its educational activities during the past year to a point where it now enjoys the whole-hearted co-operation of the automobile associations.

Executive Co-operative Necessary

The officers of the Steam Railroad Section are: Chairman, A. V. Rohweder, superintendent of Safety, Duluth, Missabe & Northern, Duluth, Minn.; vice-chairman, J. D. White, superintendent of safety, Illinois Central, Chicago; and secretary, E. R. Cott, safety agent, Hocking Valley, Columbus, Ohio.

Chairman Rohweder, in his opening address recounted briefly the work accomplished by the Steam Railroad Section during the past year. He referred to the fact that the Section had made material recognition of the wonderful work accomplished by Ralph C. Richards, the "Father of Safety First," in the dedication of a bronze tablet in the Chicago & North Western Station, Chicago.

In his remarks the chairman particularly stressed the fact that safety is something that must not only be preached to the men in the ranks but must be believed in by those above him from the president down to the gang or section foreman. Men can be taught the value of safety work but the opinion was expressed that the real opportunity to put the safety movement across in the future lies, to a great extent, in the attitude of higher officers toward the work and the eventual recognition of the fact that it is an important factor in the improvement of operating conditions.

The Executive's Responsibility in Railway Safety

At a luncheon of the railroad section members W. A. McGonagle, president, Duluth, Missabe & Northern, delivered an address in which he commended the work of the Safety Council and pointed out the importance of each railroad organizing for the promotion of safety work. He said in part:

The need of the National Safety Council, as a clearing house for safety ideas and methods of accomplishing them, is becoming more and more apparent, not only to the railroads of our country, but to all industries, and to our national, state and city and even our rural governments. The total membership of the National Safety Council, now consisting of about 4,300 railroads, industries and municipalities, is appealing and shows conclusively that the people of this country are alive to their responsibilities in regard to the conservation of human life, and are anxious to become associated with specialists along this line and follow those recommended practices that will give us the desired results.

The National Safety Council is doing a noble service in bringing together in congresses like this, men from all walks in life, each giving the best that is in him for the welfare of all, with the single thought of eliminating the needless accidents that have sapped the life of our nation and have to a degree disgraced our modern civilization. Let us therefore be up and doing to make our country, already the brightest and best country in the world, also the safest nation for each of us to labor in, and to give confidence to all that each one of us is looking out to an unusual degree for the welfare of others.

In my opinion, each railroad in the United States and each and every industry should be active members in such national organizations as this one, and preferably this particular organization, in order to secure maximum benefit at the lowest consistent cost of the safety work being fostered by the master workmen who compose the official roster of this organization. There is not and never can be any politics in this National Safety Coun-

cil, nor can it ever be controlled by any particular religious denomination; on the contrary interest for the personal safety of all the people is the first consideration of the officers and employees. Its meetings are held in different centers in our country, so as to make it reasonably convenient for the greatest number to attend and thus get at first hand full information regarding recommended practices and take this knowledge back to our homes to assist in adding further safeguards to our employees and to the public at large.

To you who are charged directly with the responsibility of organizing and directing safety departments, I wish to say that outside of the credit you will receive for carrying out humanitarian ideas there also comes the assurance that it pays in hard dollars to save the lives and limbs of our employees. Too many of us in the past have hesitated as we comprehended the cost of organizing and maintaining safety departments, but my own experience has fully satisfied me that all the expenditures we have made in this department of the Duluth, Missabe & Northern were warranted. The investment made has been a paying one, even measured commercially, and we are in position to recommend to all other executives the organization and permanent maintenance of a strong and effective safety department, which, from our own experience, we know will tend to unite in a bond of fellowship all the officers and working men of your companies.

The accident record of the Duluth, Missabe & Northern Railway Company, based on the number of accidents involving the loss of one day's time or more for the years 1917 to 1925, inclusive, is as follows:

Year	1917	1918	1919	1920	1921	1922	1923	1924	1925
Number of Accidents.	607	413	494	298	179	68	71	45	75

The tonnage moved for the year 1925 was 21,373,044 tons; our maximum number of employees was 3,349; our average number 2,701. In addition to the above, our records show that the severity of injuries has been greatly reduced.

The Missabe Road has operated from December, 1923, to date, a period of nearly three years, without a single death and without the loss of an arm, hand, eye, leg or foot to any employee or passenger.

In our car repair shops at Proctor, where we employ 216 men on the average and repair an average of 1,898 bad order cars per month, we have a record of operating over eight years without a single lost time accident where one day's time or more has been lost.

These records mean only one thing, namely, that it pays to work out an intelligent plan of co-operation in reducing accidents and it pays for railroad executives to lend a hand in helping employees to help themselves to the end that sorrow may be banished in so far as is possible and that employees may leave their homes for their work on our railways and in our shops with a reasonable assurance that they will not be harmed.

In conclusion I desire to state that our company has been repaid many times over for the cost of organizing and developing the safety work on our railroad; it has paid me in peace of mind to assist in working out an effective system for preventing accidents to our employees; and I am much prouder of our record in saving human lives and limbs than I am of the splendid low operating cost we have attained, much of which is the result of loyal and faithful co-operation of our officers and men.

It is my hope that all our railways, industries and municipalities may see the light of the new day and realize that we are indeed "Our Brother's Keeper."

Other Business

Additional reports which will be reviewed in a later issue of the *Railway Age* include a discussion of The Surgeon's Viewpoint on Returning Men to Service, by Dr. W. L. Hartman, chief surgeon of the Michigan Central; Welfare and Safety, by W. H. Jones, assistant director, safety and first aid, Canadian National; and Safety Work in the Mechanical Department, by L. K. Sillcox, general superintendent motive power, Chicago, Milwaukee & St. Paul.

The election of officers of the Steam Railroad Section for the coming year resulted as follows: Chairman, J. D. White, superintendent safety, Illinois Central, Chicago; vice-chairman, E. R. Cott, supervisor safety, Hocking Valley, Columbus, Ohio; secretary, J. E. Long, superintendent safety, Delaware & Hudson, Albany, N. Y. The attendance at the Railroad Section meeting was about 300. Large delegations from individual roads included the New York Central, 72; the Pullman Company, 51; the Santa Fe, 16; and the Pennsylvania, 14.

Associated Traffic Clubs Meet at Milwaukee

AN educational program designed to assist shippers and railroad men in increasing their knowledge of traffic matters was adopted by the Associated Traffic Clubs at its semi-annual meeting at the Hotel Pfister, Milwaukee, Wis., on October 26 and 27. The plan was drawn up by the educational committee composed of representatives of leading universities, extension universities and traffic managers. Other subjects considered at the meeting, which was attended by 150 traffic representatives, included the reports of the president, secretary, treasurer, board of directors and membership committee, the Hoch-Smith Resolution, the regulation of motor vehicle carriers, transportation legislation desired of Congress, the simplification of tariffs, the co-operation between traffic clubs and regional advisory boards, and service to member clubs. An address of welcome was presented by Daniel W. Hoan, mayor of Milwaukee, who urged that traffic clubs co-operate with municipalities to improve the traffic problems of larger cities. The fundamental problem, he said, is the congestion on streets caused by pedestrians and vehicles which encumber the railroads by handicapping trucking to and from stations. He also urged the development of waterways in conjunction with railroads, describing the plan of Milwaukee to develop both, although it receives one-third of its freight by water.

The president, in his report, referred briefly to the accomplishments of the association. During the past year several committees were appointed to study traffic subjects. He urged that all members clubs make an effort to utilize the slogan "Shipper and Carrier Co-operation in Transportation" wherever possible.

The membership committee reported that at present 65 per cent of the 80 existing traffic clubs are members of the association. Special effort will be made this year to increase the membership and a circular will be issued to member clubs showing those clubs not members, so that their membership can be solicited.

No further action was taken on the Hoch-Smith Resolution and the subject was stricken from the docket as the association has already expressed itself as opposed. As the regulation of motor vehicle carriers was approved at the meeting at Louisville, Ky., the subject was stricken from the docket because the association still

stands on its previous resolution. Transportation legislation desired of Congress was considered at the directors' meeting and it was found that the only subject for consideration is the consolidation of railroads. Although the association has already expressed itself in favor of voluntary consolidation, it was felt that the association should again express itself. The subject was referred to the committee on procedure to again direct the attention of Congress to the attitude of the association. Simplification of tariffs was stricken from the docket as no conference has been held with the Interstate Commerce Commission in regard to re-issuing Circular 18A. At the Dallas meeting it was found that little could be done in the simplification of tariffs until this circular was re-issued. The meeting expressed satisfaction with the co-operation between traffic clubs and regional advisory boards and it was felt that there was no necessity for formal action by the association since the members of one were members of the other and any formation of committees might complicate matters.

Four Fields Included in Educational Program

The educational program presented by the educational committee, of which Wayne E. Butterbaugh, director of the traffic management department of the LaSalle Extension University, is chairman, included four fields: (1) executives in all branches of business activities; (2) traffic executives; (3) schools and colleges; and (4) the general public. The first field was chosen to spread information among executives in all branches of business activities, both shipper and carrier, as to the place of a traffic department in a modern business organization, the nature of traffic work and the various functions that should be assigned to this department and to its manager for handling. This field includes railroad executives other than traffic and railroad directors who need their attention directed to the value of their traffic departments and employees and how traffic services may be developed and capitalized to the utmost degree. The second was chosen as a means of furnishing information concerning traffic and its problems to traffic executives, and to clerical, technical and administrative employees in order that they may be enabled to handle the present duties of the traffic department and expand the functions of the better organized department of the future. The third was chosen because it was felt that educational work among schools and colleges for the purpose of better preparing students for business and particularly to pre-

pare students for traffic work was needed. The fourth was chosen to create a better understanding on the part of the general public concerning the nature, purpose and value of traffic work, traffic departments, traffic managers and traffic employees.

As all fields cannot be developed at once, it was considered expedient to lay out a program covering a four or five-year period. To bring this about, the committee recommended that during the first year attention should be directed toward industrial and railroad business executives, during the second year to the shipper and carrier traffic executives as well as to the business executive, during the third year toward the future business and traffic executive and during the fourth year to the general public.

To accomplish this plan the initial efforts of the committee will be centered upon a campaign for a more complete understanding of traffic on the part of business executives. It was recommended that each of the traffic clubs associated with the national organization immediately establish a local educational committee comprised of a chairman, a vice-chairman, a secretary and one or two additional members. The local committees will reach the business executive group and the three other groups. This will be done by establishing speakers' bureaus, the holding of joint meetings, securing newspaper and magazine publicity, and co-operation from the carriers and obtaining the assistance of certain governmental bodies. By establishing speakers' bureaus the local educational committees can call upon their members for volunteer speakers which can be furnished various clubs and business associations in the community. The holding of joint meetings and smokers was suggested because it affords an opportunity for traffic club members to come in contact with local associations and societies composed of other business men. The National Educational Committee will secure the co-operation of railroad, steamship and other carriers, both individually and collectively, and enlist their support in the campaign. A great many people can be reached through the railroads and such organizations as the shippers' advisory boards. An effort will be made to enlist the Transportation division of the Bureau of Foreign and Domestic Commerce of the Commerce Department, the Secretary of Commerce, the Interstate Commerce Commission, the United States Shipping Board, the Bureau of Public Roads, and the National Association of State Railroad and Public Utility Commissioners.



Loading Watermelons at Boston, Georgia, on the Atlantic Coast Line
Eighty-five Cars in One Day

The Work of a District Office in Supervising Transportation

A review of the organization necessary and the distribution of duties

By J. J. Sunderland

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THE factors which enter into the actual production of transportation may be classed as follows:

(1) Car Service.—The prompt, adequate and equitable distribution of freight equipment to shippers, and the proper distribution of passenger equipment to meet the requirements of passenger, mail, baggage and express traffic.

(2) Station Service.—The acceptance from shippers and delivery to consignees of all freight traffic, and the efficient handling of all passenger and baggage car traffic.

(3) Yard Service.—The assembling, marshalling into proper trains and prompt dispatching, of all outbound traffic, and the prompt placement for delivery of all inbound traffic.

(4) Train Service.—The actual movement of traffic from point of origin to destination.

For the proper supervision of these activities on a district, it is essential that a competent, well-balanced, clerical staff be maintained in the district office to scrutinize the operation of the several factors referred to above thoroughly and with regularity, and to produce and reflect, in concise form, for the benefit of the general superintendent and the district officers, all irregularities, inefficiencies and the progress made in the efficient and economical function of the transportation machine.

The staff should be so organized that a senior clerk shall have charge of each of the several factors entering into the movement. This clerk should be selected for his special qualifications or training in the particular service to which he is assigned, so that the best results may be obtained. Each senior clerk should have under his immediate supervision the required number of clerical assistants to handle the work in hand properly and promptly, so that irregularities may be brought to light and corrective measures applied without undue delay.

The work of the office should be subdivided as follows and a senior clerk placed in charge of each of the assigned duties: (a) Chief clerk; (b) district freight car distributor; (c) district passenger car distributor; (d) train and yard service clerk; and (e) freight service clerk.

The Problem of Car Distribution

The chief clerk should have general supervision over and be responsible for the proper working of the entire clerical staff. He should take charge of, and deal with, all matters not directly assigned to the "service" clerks, supervise the work of all time inspectors, maintain an up-to-date record of all watch inspections and deal promptly with all cases where employees are found delinquent in the observance of the general rules governing "standard time." He should also supervise and maintain up-to-date records covering the examination of employees on vision, color sense and hearing, as well as examinations required on the general rules.

The amount paid out to other railways, and to owners of private line cars, for the use of their equipment on the Canadian National during 1925 amounted to approximately \$14,000,000. During the same period, these railways produced a total of 414,637,000 empty car miles. The cost of producing this empty car mileage, based on the system's average cost per thousand gross ton miles—selected accounts, represents an outlay of \$6,500,000, or a total expenditure of over \$20,000,000 for car hire and empty car mileage produced to meet the requirements of the traffic.

In view of this heavy expenditure, the factor of car distribution demands constant and intense supervision so that idle car days and empty car miles may be reduced to the lowest possible minimum. The district car distributor should, therefore, have under his immediate supervision sufficient clerical assistance to permit him to scrutinize, with regularity, every phase of car distribution. This includes: (1) A daily intense scrutiny of the work of division car distributors, and (2) regular scrutiny of the reports covering the use made of freight cars with respect to (a) class of traffic; (b) class of car used; (c) loading of cars to full carrying capacity; (d) misuse of cars of large carrying capacity for commodities that could be loaded into cars of a less carrying capacity; (e) proper use of foreign equipment and the handling of such equipment under car service rules; (f) checking up closely the cross-hauling of empty cars with particular attention to all empty car movements made against the recognized current of empty equipment on each subdivision or division; (g) equalizing the distribution of freight equipment as between divisions; (h) scrutiny of yard reports with respect to delays due to—insufficient or improper switching, awaiting lifting, inefficient handling by freight or yard staffs, awaiting disposition from the division car distributor, and proper application of the demurrage rules.

The basis of economical car distribution, and the prompt handling of freight equipment, depends on the agents' and yardmasters' "on hand" report. It is, therefore, important that this report reflect the actual standing of all cars in yards and at intermediate sidings. In order to insure that this is being done, and to impress upon agents the importance of observing the car service and demurrage rules strictly, and the prompt handling of freight equipment, it is essential that a traveling car service agent be attached to each district, whose duty it is to check up with regularity the methods employed and the manner in which the reports are compiled, securing the necessary information from independent sources to verify the accuracy of the reports.

In the distribution of passenger equipment, the volume of passenger, baggage and express traffic of every passenger train with the "peak load" must be known, so that suitable and sufficient equipment may be assigned by the

passenger car distributor to all trains, to meet traffic requirements satisfactorily and with the use of the minimum number of units. The seating capacity of day coaches must be known and assignment made so as to conserve equipment to meet the requirements of extra travel during "peak load" periods. On districts where passenger travel is light and the service regular these duties can be placed under the jurisdiction of the chief clerk.

The Study of Costs

To distribute both passenger and freight power to meet traffic requirements on each division, the report showing the locomotive record at terminals should be examined carefully by the train and yard service clerk for delays to locomotives at enginehouses to secure the maximum efficiency from the power available. The daily report should be scrutinized for terminal detention to trains, speed of freight trains between terminals, and the loading of freight engines to full hauling capacity.

The train and yard service clerk should also scrutinize train costs—selected accounts—closely as reflected on the monthly reports as well as the unproductive wages paid to train and enginemen, representing wages paid for which an actual train mile is not produced, such as initial terminal delay, final terminal delay, road overtime and switching at intermediate terminals and way stations. He should also study the operations at all principal yards, maintaining a close check on traffic and reducing yard switching service promptly with traffic fluctuations.

The freight service clerk should trace carload and l.c.l. freight and follow up the causes of delay for correction. He should handle loss and damage claims and scrutinize daily freight house handling (tonnage and labor costs), freight office costs and track scale reports for overloaded and underloaded cars, and follow up with agents and shippers.

He should make a regular check of berth loadings at the principal freight houses, reassigning berths and merchandise car runs with a view to having all merchandise cars dispatched loaded to maximum capacity.

The several reports that are compiled to determine the transportation activities, and the cost thereof, are of no value unless based on accurate information, and in order to insure that such reports are compiled correctly, it is important that the clerks assigned to supervise the several factors entering into the transportation movement, verify the correctness of these reports from independent sources, such as conductors' train journals, scale reports, loading reports, shipping bills, etc., and that the wage cost, as reflected thereon, be compared with the actual expenditure as appearing on the payrolls.

Efficiency and economy in the production of transportation can only be secured through systematic supervision of the several elements entering therein, such as the full use of freight equipment, thereby reducing per diem and empty car miles; increasing train speeds by the elimination of road delays; reducing initial and final terminal delays; proper production by every yard engine employed; maximum efficiency in the handling of merchandise freight at freight houses, and maximum train loading.

THE TEXAS COURT OF CIVIL APPEALS holds that where both parties knew a shipment was destined for Germany it was one in foreign commerce although the initial movement was under a local bill of lading; and the state statutes had no application.—*McFaddin Rice Milling Co. v. Texas & N. O. (Tex. Civ. App.)*, 277 S. W. 191.

Dining Car Service Not Profitable

THE average meal served on the dining cars of the Southern Pacific in 1925 resulted in a loss of 52 cents, according to figures compiled by T. O. Edwards, general auditor. This loss was sustained for the convenience of passengers and whatever benefit the railroad derived from the advertising value of the pleased patron. For each meal served, before any food is set before the patron, the expense is 67 cents. This includes wages 40 cents, laundry and linen 5½ cents, fuel for cooking 7½ cents, ice and watering, 4 cents, menus and stationery 7½ cents, maintenance of cooking utensils, dishes and silverware 2½ cents, the handling of supplies and the stocking of cars 7½ cents, interior car cleaning 1½ cents, and superintendence and accounting 3 cents. As the dining car must be hauled an average distance of 4½ miles for every patron served and the approximate cost of hauling the car is 12 cents a mile, an additional expense of 54 cents must be absorbed by the company for every meal served.

Approximately 6,000,000 meals were served during 1925 on dining cars, steamers and in station restaurants of the Southern Pacific. This is equivalent to enough food to supply the entire population of Chicago for 24 hours. The average check during this period was 93 cents. The materials and supplies necessary to complete a modern dining car costing approximately \$50,000 includes 837 pieces of silverware, 506 pieces of chinaware, together with 2,400 table napkins and 670 table cloths. The cost of equipping the car is \$7,500, while interest charges, excluding such other fixed charges as depreciation, maintenance and taxes, amount annually to \$3,450 per car.

To provision the fleet of 125 dining cars, 26 all-day lunch cars and 37 club cars, together with dining rooms of 21 ferry steamers and 13 restaurants, requires an extensive commissary department. The commissary departments located at San Francisco, Cal., Oakland, Los Angeles, Portland, Ore., Houston, Texas, and El Paso, are equipped with smoke houses for the preparation of smoked meats and sausages and machines for making rolls and hot cakes, as well as storage facilities to protect food. During 1925 dining cars on the Southern Pacific used more than 6,500 heads of beef or 721,193 lb. Other meat requirements were 216,238 lb. of lamb, 273,691 lb. of pork, 7,970 lb. of mutton, 139,286 lb. of veal, 54,620 lb. of bacon, 230,315 lb. of assorted sausages and 350,750 lb. of cured meats. In the same year chefs prepared 226,922 lb. of ham and 3,359,352 eggs for patrons. Over a quarter of a million pounds of butter formed the complement to 203,940 hot rolls and 811,960 lb. of bread which was served. The chickens used totalled 237,250, salmon 265,031 lb., and vegetables 3,055,937 lb., including 1,045,341 lb. of potatoes. A total of 188,381 gal. of milk was used while cream totaled 70,870 gal., grape fruit 3,890 boxes, oranges 7,205 boxes, lemons 1,201 boxes and apples 9,695 boxes. The coffee consumed amounted to 307,000 gal., while the ice cream amounted to 23,783 gal. Soft drinks purchased amounted to 5,451 cases.

THE CIRCUIT COURT OF APPEALS, Third Circuit, holds that in an action for the death of a boy at a crossing, apparently struck by an express while waiting for a freight on the other track to pass, the testimony of a witness that, while driving a milk-wagon, he had had, under some undisclosed situation, a narrow escape at the same crossing, was inadmissible.—*B. & O. v. Moore*, 13 F. (2d) 364.

General News Department

Basil Cole has been appointed traveling secretary of the Railroad Y. M. C. A. in the Central and Western Regions with headquarters at 19 South La Salle street, Chicago.

John F. Dudley has been appointed traveling secretary of the Railroad Y. M. C. A. in the Southeastern region, with headquarters at the Railroad Y. M. C. A., Richmond, Va.

The Boston & Maine has agreed with representatives of the clerks and other station employees to refer to arbitration the employees' request for six cents an hour advance in their pay.

The St. Louis Railway Club will hold its next meeting on November 12, at the Statler Hotel, when a paper on "Rapid Transit" will be read by C. E. Smith, consulting engineer for the city of St. Louis.

The Red Cross is to start its campaign for funds on November 11, Armistice Day, and E. E. Loomis, president of the Lehigh Valley, is chairman of the railroad group for New York City. Separate groups are also being formed for the railroad supply trade, George L. Brown, president of the Superheater Company, chairman; and among the employees of the American Railway Express Company, H. K. Brooks, chairman.

George W. Martin, general agent of the Chicago, Rock Island & Pacific, with headquarters at Denver, Colo., has been elected president of the Travelers' Aid Society. Heretofore the society has been under the direction of the Y. M. C. A., but it has grown to such an extent that an incorporation and an individuality was deemed necessary. The directorate consists of railroad men and business men and women.

The Interstate Commerce Commission has allowed the Chicago & Eastern Illinois an extension of time from November 1 to January 1 in which to complete the automatic train control equipment of its locomotives operating over the tracks of the Cleveland, Cincinnati, Chicago & St. Louis between Pana and East St. Louis, Ill. The latter is equipped with the General Railway Signal Company device and the C. & E. I., with the Miller train control of the ramp type and tests are being made to perfect an interchangeable device.

The Litchfield & Madison has been authorized by the Interstate Commerce Commission, to operate, under trackage rights, over that part of the line of the Chicago & Northwestern between the northern terminus of the Litchfield & Madison, in Madison county, and Benld, Ill., a distance of eight miles. The two railroads were authorized, May 8, 1926, to make extensions of their lines in Madison and Macoupin counties, but until September 13, the Litchfield & Madison made no application to operate over the tracks of the other road.

Interchangeability of Miller and G.R.S. Train Stop

Recent tests made by the New York Central on the high speed tracks east of Cleveland have shown that engines carrying receivers of the Miller alternating current type train stop also function correctly with the inductors of the General Railway Signal Company's auto-manual type. These demonstrations included tests up to full speed for passenger trains through air gaps up to 2½ in. with a lateral offset of 5 in. and another test with an air gap of 3½ in. with a lateral offset of 3 in. The receivers in these cases were 5 in. and 6 in. above the rail level. A test was also made with an air gap of 1½ in. and a lateral offset of as much as 6½ in. The Miller receivers and inductors operate through 6 in. air gaps and comparable lateral offsets. Engines equipped with the Miller apparatus may, therefore, be

operated over the Miller type of rail-level integrity-checking inductors on new installations without replacing the present auto-manual inductors now in service on previous adjacent installations.

New Railroad Club in New Orleans

The Louisiana Car Department Association was recently organized in New Orleans, La., by car foremen, car inspectors, etc., the chartered members totalling 140. The association, which is similar to the Western Railway Club, of Chicago, holds meetings on the third Thursday of each month. Besides car foremen, car inspectors, etc., railway supply men are eligible for membership. Officers of the club are Ugo Mendall, president; T. L. Butvher, first vice-president; E. A. Banks, second vice-president; J. E. Durand, treasurer; L. Brownlee, secretary; and J. D. Ernst, chairman of the publicity committee.

Coal in August \$2.57

Class I railroads paid an average of \$2.57 per ton in August for coal used as fuel for road locomotives charged to operating expenses, according to the Interstate Commerce Commission's monthly compilation of railroad fuel statistics. This compares with \$2.65 for August last year. The average cost of fuel oil was 2.95 cents per gallon, as compared with 3.23 cents in August last year. The total cost of coal and oil for the month was \$25,272,177, as compared with \$26,198,605 in August, 1925. For the eight months ended with August the railroads expended \$209,784,721 for fuel for road locomotives, as compared with \$213,926,911 for the corresponding period of last year.

Locomotives and Freight Cars Installed

Locomotives installed by the Class I railroads in the first nine months this year totaled 1,664, the Car Service Division of the American Railway Association has announced; an increase of 322 over the corresponding period last year. Locomotives on order on October 1 this year totaled 443, compared with 237. Freight cars installed in service in the first nine months totaled 85,383, a decrease of 28,432, under the number for corresponding period in 1925, and 35,344 under the corresponding period in 1924. This included 8,158 installed during the month of September, of which 3,646 were box cars, 3,313 coal cars and 468 refrigerator cars. Class I railroads on October 1 had 16,846 freight cars on order compared with 21,055 on the same date last year and 49,702 on the same date in 1924. These figures as to freight cars and locomotives include new and leased equipment.

The Lehigh Legion of Honor

This is the name of an honor roll which E. E. Loomis, president of the Lehigh Valley proposes, as a means of giving recognition to the efforts of employees who, by suggestion or invention, contribute to the efficiency of operation of any or all departments of the railroad; action to be based on the decision of a board of officers. President Loomis, explaining the proposition in a circular, says:

"The management values the loyal co-operation of its people and the Lehigh Legion of Honor is intended to give substantial expression of its appreciation of the efforts of employees to do more than what might regularly be expected of them. Nomination for legion membership should be submitted to the president, through regular channels, endorsed by the heads of the proper departments and accompanied by a full explanation of the reasons upon which the nomination is based.

"A certificate of membership and a suitable decoration will be awarded to those selected for the honor. Legion men will be

(Continued on page 862)

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1926

Name of road	Average mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents	Net after taxes, 1925
		Freight	Passenger	Total	(inc. misc.)	Way and structures	Maintenance of equip-	Traffic	Trans- portation	General	Total			
Akron, Canton & Youngstown.....Aug.	171	\$291,535	\$566	\$30,878	\$54,097	\$28,081	\$28,081	\$10,580	\$76,525	\$18,004	\$187,287	\$116,591	\$97,519	\$75,085
Ann Arbor.....Aug.	171	2,050,153	3,251	2,147,100	403,599	236,277	236,277	90,148	614,270	123,875	1,467,273	1,237,927	259,577	463,108
Ann Arbor.....8 mos.	293	4,337,790	32,819	4,943,534	69,122	111,051	111,051	12,100	170,402	10,042	3,713,502	3,230,932	88,633	82,014
Ann Arbor.....8 mos.	293	3,485,655	201,321	3,815,309	402,692	824,715	824,715	95,325	1,545,550	103,204	2,963,105	2,552,204	669,507	672,465
Atchison, Topeka & Santa Fe.....Aug.	9,321	15,374,887	3,328,348	20,050,893	2,288,595	3,154,828	3,154,828	344,958	5,229,182	344,513	11,308,791	8,742,102	6,486,677	4,291,257
Atchison, Topeka & Santa Fe.....8 mos.	9,261	94,186,948	26,704,202	120,864,344	19,233,496	24,834,396	24,834,396	2,880,265	39,353,736	2,958,296	88,924,296	60,425,776	30,123,937	22,266,283
Gulf, Colorado & Santa Fe.....Aug.	1,908	3,111,989	278,895	3,510,156	370,193	527,801	527,801	48,058	971,544	60,688	1,971,660	1,538,496	1,251,482	508,818
Gulf, Colorado & Santa Fe.....8 mos.	1,908	16,723,426	1,940,753	19,648,673	3,762,869	3,856,497	3,856,497	408,082	6,448,633	509,541	14,961,368	14,687,305	3,969,668	2,888,518
Panhandle & Santa Fe.....Aug.	923	1,664,419	142,185	1,887,605	176,359	278,166	278,166	8,445	515,408	23,605	985,859	901,746	786,924	254,791
Panhandle & Santa Fe.....8 mos.	923	8,015,385	1,058,747	9,587,952	923,400	1,778,052	1,778,052	77,593	2,722,593	162,383	5,627,568	3,960,384	2,850,329	1,086,494
Atlanta & West Point.....Aug.	93	186,565	73,249	287,231	28,978	50,082	50,082	10,806	94,403	11,999	200,775	86,456	67,092	45,960
Atlanta & West Point.....8 mos.	93	1,321,673	556,819	2,122,488	277,766	386,896	386,896	89,064	753,362	93,427	1,640,635	481,835	274,953	270,811
Western of Alabama.....Aug.	133	169,513	64,684	255,730	22,148	54,348	54,348	11,285	83,340	11,228	185,655	70,035	51,599	80,245
Atlanta, Birmingham & Atlantic.....Aug.	133	1,542,591	517,277	2,250,885	264,373	446,636	446,636	94,214	706,681	95,239	1,643,032	607,853	476,525	470,722
Atlanta, Birmingham & Atlantic.....8 mos.	639	4,015,570	59,340	4,999,684	131,454	86,647	86,647	28,310	178,469	17,302	4,551,182	44,502	30,809	33,288
Atlantic Coast Line.....Aug.	4,930	4,509,155	1,374,095	6,329,528	1,142,561	1,608,169	1,608,169	163,013	2,550,911	164,108	5,662,921	666,607	116,082	154,933
Atlantic Coast Line.....8 mos.	4,927	46,013,645	15,700,638	66,777,697	8,341,396	12,242,835	12,242,835	1,237,880	23,537,322	1,359,566	47,265,226	19,507,471	15,099,573	13,335,359
Charleston & Western Carolina.....Aug.	342	251,212	28,296	291,356	61,589	51,007	51,007	7,136	117,977	6,052	243,761	47,595	27,500	41,328
Charleston & Western Carolina.....8 mos.	342	2,375,562	187,816	2,670,884	485,409	370,934	370,934	58,911	1,020,627	53,365	1,989,246	681,638	512,243	439,176
Baltimore & Ohio.....Aug.	5,294	18,544,293	2,640,737	22,636,467	3,200,976	4,264,431	4,264,431	504,272	7,098,449	506,970	15,775,381	6,861,086	5,951,663	5,747,732
Baltimore & Ohio.....8 mos.	5,294	133,009,752	18,584,207	162,020,689	20,029,219	35,549,643	35,549,643	3,290,220	55,933,506	4,255,495	120,943,211	41,527,478	34,257,511	32,171,088
Baltimore & Ohio Chicago Term.....Aug.	80	.....	337,414	27,532	24,134	27,532	24,134	2,109	160,489	13,279	233,316	103,598	141,326	132,078
Baltimore & Ohio Chicago Term.....8 mos.	80	.....	2,485,115	268,685	254,650	268,685	254,650	15,655	1,287,996	94,743	1,971,116	513,999	106,161	87,252
Staten Island Rapid Transit.....Aug.	23	97,040	157,170	304,571	37,135	30,232	30,232	2,799	122,012	16,443	208,621	95,250	78,445	45,050
Staten Island Rapid Transit.....8 mos.	23	848,955	1,008,740	2,140,095	388,737	258,092	258,092	17,044	890,889	120,948	1,575,710	46,385	328,037	46,683
Bangor & Aroostook.....Aug.	615	258,150	51,115	335,784	96,636	110,789	110,789	7,767	111,797	19,600	354,129	18,345	42,835	3,352
Bangor & Aroostook.....8 mos.	615	3,660,149	514,698	4,382,908	788,467	927,408	927,408	42,829	1,193,161	181,688	3,158,854	1,224,054	876,172	1,085,349
Belt Ry. Co. of Chicago.....Aug.	32	.....	677,860	68,424	68,424	70,208	70,208	3,487	259,059	8,879	411,057	264,803	216,494	160,778
Belt Ry. Co. of Chicago.....8 mos.	32	.....	4,899,075	475,795	573,423	573,423	573,423	26,072	2,283,515	72,781	3,365,586	1,535,977	1,335,421	1,026,432
Bessemer & Lake Erie.....Aug.	228	1,990,133	19,756	2,035,847	113,084	324,670	324,670	13,934	405,680	30,436	886,634	43,610	983,313	790,368
Bessemer & Lake Erie.....8 mos.	228	10,427,140	126,077	10,745,604	2,585,533	2,585,533	2,585,533	115,580	2,658,550	270,446	6,433,336	4,312,268	3,634,849	3,561,161
Bingham & Garfield.....Aug.	33	45,319	37	52,331	3,939	7,016	7,016	1,378	9,494	5,322	27,338	24,393	12,709	28,623
Bingham & Garfield.....8 mos.	33	357,031	44	375,667	59,096	68,535	68,535	11,996	84,447	40,367	265,656	110,011	31,868	157,050
Boston & Maine.....Aug.	2,169	4,268,362	1,981,598	5,719,682	1,142,138	1,209,124	1,209,124	85,315	2,567,101	213,247	5,247,394	1,818,045	1,575,370	1,324,643
Boston & Maine.....8 mos.	2,236	33,678,705	13,530,896	53,612,549	6,699,503	9,823,368	9,823,368	585,187	21,349,653	1,905,285	40,569,762	15,042,787	11,039,430	8,853,698
Brooklyn Eastern Dist. Terminal.....Aug.	9	119,392	.....	126,174	8,084	13,657	13,657	278	43,556	5,442	71,017	55,157	46,782	40,597
Brooklyn Eastern Dist. Terminal.....8 mos.	9	932,224	.....	991,246	65,805	116,746	116,746	3,279	354,709	49,328	589,867	401,379	340,673	333,273
Buffalo & Susquehanna R. R. Corp.....Aug.	253	94,670	2,488	102,963	31,306	41,229	41,229	1,779	34,170	7,540	116,024	13,061	15,261	4,450
Buffalo & Susquehanna R. R. Corp.....8 mos.	253	744,220	21,886	800,903	220,488	311,476	311,476	14,957	273,970	63,263	884,154	83,251	106,551	117,222
Buffalo, Rochester & Pittsburgh.....Aug.	601	1,489,266	122,660	1,668,999	259,021	400,034	400,034	27,355	537,072	44,163	1,269,554	399,445	316,444	299,413
Buffalo, Rochester & Pittsburgh.....8 mos.	601	10,632,383	849,548	11,909,290	1,373,322	3,320,659	3,320,659	230,065	4,176,530	357,738	9,475,620	2,433,670	2,000,502	1,372,729
Canadian Pacific Lines in Maine.....Aug.	233	77,666	35,729	126,056	35,797	26,751	26,751	5,952	61,964	3,596	134,060	8,004	23,904	46,990
Canadian Pacific Lines in Maine.....8 mos.	233	1,350,548	247,791	1,701,732	357,334	363,467	363,467	41,379	758,693	26,847	1,577,720	124,012	23,812	78,477
Central of Georgia.....Aug.	1,917	1,916,964	514,090	2,024,192	375,250	462,815	462,815	85,642	930,685	98,163	1,960,646	663,546	538,206	481,081
Central of Georgia.....8 mos.	1,917	15,074,503	4,197,974	21,056,930	3,087,550	3,659,123	3,659,123	68,089	7,890,990	786,117	16,041,960	5,014,970	4,064,156	3,613,959
Central of New Jersey.....Aug.	690	4,293,988	1,092,552	5,719,682	476,753	1,135,877	1,135,877	49,938	1,864,128	117,455	3,667,156	2,052,526	1,574,518	1,442,705
Central of New Jersey.....8 mos.	690	30,208,316	6,399,914	39,138,843	3,650,405	8,358,039	8,358,039	351,633	14,546,666	1,033,828	28,110,914	11,027,929	7,773,877	6,551,713
Central Vermont.....Aug.	433	595,397	133,052	811,271	190,875	102,258	102,258	17,454	307,002	25,326	644,875	166,396	147,270	142,681
Central Vermont.....8 mos.	433	4,453,707	902,318	5,957,466	1,274,985	1,274,985	1,274,985	126,306	2,572,575	184,435	5,073,361	884,105	731,164	598,034
Chesapeake & Ohio.....Aug.	2,650	10,478,089	842,158	11,815,496	1,662,521	2,490,156	2,490,156	124,440	3,096,212	244,579	7,646,003	4,169,493	3,410,207	3,425,660
Chesapeake & Ohio.....8 mos.	2,644	76,120,490	6,040,005	85,819,676	12,274,602	20,910,613	20,910,613	943,679	23,481,964	1,971,528	59,839,300	25,980,376	21,106,088	19,380,165
Chicago & Alton.....Aug.	1,055	14,258,722	4,353,368	20,353,025	413,163	662,742	662,742	74,477	944,405	49,856	12,377,770	815,855	707,822	505,712
Chicago & Alton.....8 mos.	1,055	14,258,722	4,353,368	20,353,025	413,163	662,742	662,742	74,477	944,405	49,856	12,377,770	815,855	707,822	505,712
Chicago & Eastern Illinois.....Aug.	945	1,858,760	501,533	2,536,732	284,489	541,092	541,092	81,820	843,503	65,055	1,820,633	716,999	438,889	285,083
Chicago & Eastern Illinois.....8 mos.	945	13,565,953	3,146,251	18,098,141	1,953,359	5,071,362	5,071,362	630,763	6,743,690	560,330	15,080,788	3,017,353	2,006,409	731,697
Chicago & North Western.....Aug.	8,457	10,223,284	2,522,096	14,265,271	2,258,906	2,771,071	2,771,071	230,757	4,862,665	338,532	10,507,315	3,757,956	2,956,725	2,707,013
Chicago & North Western.....8 mos.	8,458	71,366,414	18,084,095	100,687,715	14,324,377	21,088,809	21,088,809	1,615,257	37,888,433	2,729,290	78,161,272	22,526,443	16,106,674	14,957,081
Chicago, Burlington & Quincy.....Aug.	9,404	10,946,003	2,376,242	14,668,136	2,268,617	2,366,500	2,366,500	265,036	4,459,516	351,290	9,807,712	4,860,424	3,755,064	3,420,723
Chicago, Burlington & Quincy.....8 mos.	9,404	76,142,767	16,188,546	102,717,550	14,458,102	20,591,269	20,591,269	2,086,318	35,002,520	2,846,750	75,505,867	27,211,683	19,688,057	15,816,773

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio	Net from railway operation.	Operating income (or loss).	Net after rents, 1925.
		Freight.	Passenger.	Total.	Way and structures.	Maintenance of equipment.	Traffic.				
Florida East Coast.....Aug. 8 mos.	849	\$1,029,564	\$451,039	\$1,480,603	\$300,927	\$273,741	\$25,030	68.7	\$1,226,876	\$226,656	\$362,608
Fort Smith & Western.....Aug. 8 mos.	849	12,033,870	6,608,470	18,642,340	3,183,989	3,013,202	247,297	68.0	15,458,351	3,458,859	3,771,110
Fort Smith & Western.....Aug. 8 mos.	249	117,393	14,995	132,388	27,760	28,670	5,657	83.0	104,728	18,999	18,300
Galveston Wharf.....Aug. 8 mos.	249	885,240	110,036	995,276	212,714	221,328	44,332	86.2	752,564	101,720	104,899
Georgia R. R.....Aug. 8 mos.	13	.....	255,190	255,190	46,869	4,341	10,724	51.2	208,361	99,907	25,059
Georgia R. R.....Aug. 8 mos.	328	336,390	100,217	436,607	65,703	96,040	22,026	68.9	374,581	166,501	106,115
Georgia R. R.....Aug. 8 mos.	328	3,112,432	684,081	3,796,513	459,128	796,430	179,174	80.2	3,317,385	86,691	85,580
Georgia & Florida.....Aug. 8 mos.	406	170,864	22,633	193,497	30,390	22,568	6,554	81.1	176,939	68,059	66,961
Grand Trunk Western.....Aug. 8 mos.	406	1,062,898	175,288	1,238,186	168,222	150,081	67,772	66.9	1,070,414	59,425	49,851
Grand Trunk Western.....Aug. 8 mos.	347	1,434,441	272,132	1,706,573	268,416	396,151	41,421	71.7	1,465,157	315,901	162,258
Atlantic & St. Lawrence.....Aug. 8 mos.	347	11,300,473	1,514,221	12,814,694	1,535,535	3,015,497	305,119	75.9	11,309,158	327,088	297,786
Chic. Det. & Canada Gr. Tr. Jct.....Aug. 8 mos.	166	140,925	43,329	184,254	71,531	39,039	6,339	71.9	112,715	2,899,277	1,922,059
Chic. Det. & Canada Gr. Tr. Jct.....Aug. 8 mos.	166	1,358,751	272,639	1,631,390	277,888	277,888	44,660	110.2	1,353,502	83,188	46,157
Chic. Det. & Canada Gr. Tr. Jct.....Aug. 8 mos.	59	295,082	2,249	297,331	45,481	13,493	4,384	89.1	251,850	148,201	57,576
Det., Grand Haven & Milwaukee.....Aug. 8 mos.	59	2,144,130	23,868	2,168,000	308,918	141,724	33,156	51.4	1,839,082	1,133,952	843,314
Great Northern.....Aug. 8 mos.	189	682,360	44,621	726,981	78,803	47,133	12,709	55.5	648,178	328,540	113,219
Great Northern.....Aug. 8 mos.	189	4,395,268	287,982	4,683,250	451,338	437,654	94,925	61.7	4,231,315	1,890,231	609,007
Great Northern.....Aug. 8 mos.	8137	9,027,099	1,306,207	10,333,306	1,647,903	2,111,811	211,181	58.3	8,685,403	3,936,217	3,731,803
Green Bay & Western.....Aug. 8 mos.	8,201	53,496,617	8,551,787	62,048,404	10,152,680	12,068,614	1,781,871	71.3	51,296,527	13,654,513	12,075,964
Gulf & Ship Island.....Aug. 8 mos.	234	124,490	4,842	129,332	32,947	29,481	4,670	85.8	124,665	8,972	7,914
Gulf, Mobile & Northern.....Aug. 8 mos.	234	979,700	56,755	1,036,455	199,809	191,012	37,137	76.6	836,646	175,082	138,899
Hocking Valley.....Aug. 8 mos.	307	265,037	375,174	640,211	182,860	74,113	4,768	119.2	457,351	66,547	33,376
Hocking Valley.....Aug. 8 mos.	307	2,070,410	375,174	2,445,584	1,395,838	543,988	40,464	117.4	1,649,746	800,662	26,549
Illinois Central.....Aug. 8 mos.	611	498,050	36,238	534,288	87,316	82,082	25,804	65.3	447,272	139,540	135,687
Illinois Central.....Aug. 8 mos.	484	3,668,334	251,822	3,920,156	670,916	636,673	260,274	69.9	3,253,482	903,397	831,974
Illinois Central.....Aug. 8 mos.	484	1,473,744	69,624	1,543,368	221,916	439,430	16,410	67.5	1,321,458	457,711	434,958
Illinois Central.....Aug. 8 mos.	348	11,431,657	514,668	11,946,325	1,509,796	3,323,071	121,822	69.3	10,436,529	3,110,199	2,902,982
Illinois Central.....Aug. 8 mos.	4,874	10,591,171	2,072,010	12,663,181	3,008,618	3,456,725	311,111	76.4	9,652,563	2,286,589	2,019,993
Illinois Central.....Aug. 8 mos.	4,874	79,068,980	16,283,712	95,352,692	14,572,717	20,922,937	2,670,793	77.1	80,679,975	16,675,465	16,715,750
Illinois Central.....Aug. 8 mos.	1,701	1,960,022	422,347	2,382,369	512,412	443,236	70,591	77.3	1,870,000	386,358	342,671
Illinois Central.....Aug. 8 mos.	1,503	13,087,687	2,494,024	15,581,711	3,129,606	3,130,231	509,394	79.8	12,452,105	1,628,824	2,675,356
Illinois Central.....Aug. 8 mos.	6,585	12,555,849	2,494,552	15,050,401	2,599,801	3,456,725	543,427	77.1	12,500,576	2,573,225	2,419,265
Illinois Central.....Aug. 8 mos.	6,585	94,516,467	19,304,704	113,821,171	18,234,066	27,547,993	3,400,872	77.9	95,282,185	18,803,517	20,067,710
Illinois Central.....Aug. 8 mos.	272	301,730	9,053	310,783	173,226	65,093	7,349	100.7	237,557	6,802	5,230
Illinois Central.....Aug. 8 mos.	272	1,320,456	59,298	1,379,754	506,637	356,365	58,427	102.9	1,221,327	82,228	10,393
Kansas City, Mex. & Orient of Tex.....Aug. 8 mos.	465	504,885	18,408	523,293	76,726	103,978	7,551	88.7	446,567	53,518	4,035
Kansas City Southern.....Aug. 8 mos.	465	2,324,166	112,374	2,436,540	498,430	498,430	59,030	83.1	1,938,110	373,867	249,426
Kansas City Southern.....Aug. 8 mos.	784	1,302,126	10,996	1,313,122	203,074	290,079	77,989	69.2	1,110,148	389,206	345,667
Kansas City Southern.....Aug. 8 mos.	784	10,395,987	998,846	11,394,833	1,406,283	2,153,104	637,790	67.8	9,988,550	3,205,327	2,816,325
Texarkana & Ft. Smith.....Aug. 8 mos.	81	228,818	12,147	240,965	25,736	21,630	6,599	50.4	214,229	115,971	41,502
Kansas, Oklahoma & Gulf.....Aug. 8 mos.	318	223,783	5,706	229,489	189,304	189,304	84,048	52.4	140,185	85,343	56,736
Lake Superior & Ishpeming.....Aug. 8 mos.	314	1,539,859	42,297	1,582,156	584,834	488,163	76,104	85.2	1,097,322	490,830	16,889
Lake Superior & Ishpeming.....Aug. 8 mos.	160	309,183	1,286	310,469	49,902	22,504	6,126	114.0	260,567	329,838	45,481
Lake Superior & Ishpeming.....Aug. 8 mos.	160	1,342,281	29,124	1,371,405	296,963	192,511	40,767	40.6	1,074,442	133,780	123,950
Lake Superior & Ishpeming.....Aug. 8 mos.	13	.....	796,555	796,555	112,561	141,803	14,221	59.0	684,000	20,600	24,115
Lehigh & Hudson River.....Aug. 8 mos.	96	283,061	2,810	285,871	41,237	41,237	9,973	62.3	275,898	89,333	70,473
Lehigh & Hudson River.....Aug. 8 mos.	96	2,010,549	17,914	2,028,463	212,902	282,085	104,246	64.8	1,815,561	638,429	441,286
Lehigh & Hudson River.....Aug. 8 mos.	219	3,503,032	1,140	3,504,172	102,459	102,459	15,548	59.4	3,391,714	227,518	191,199
Lehigh & Hudson River.....Aug. 8 mos.	219	3,502,115	10,538	3,512,653	355,165	768,416	41,479	67.5	3,157,188	979,093	1,014,141
Lehigh Valley.....Aug. 8 mos.	1,363	6,071,246	872,777	6,944,023	1,552,937	2,069,254	139,520	70.5	5,381,086	1,744,279	1,706,069
Louisiana & Arkansas.....Aug. 8 mos.	1,363	4,163,431	536,292	4,699,723	583,913	1,106,937	1,109,289	75.5	3,595,010	9,955,104	8,995,982
Louisiana & Arkansas.....Aug. 8 mos.	302	249,431	19,383	268,814	41,322	51,169	11,493	62.7	227,422	111,251	92,120
Louisiana & Arkansas.....Aug. 8 mos.	302	2,546,632	150,813	2,697,445	428,447	462,611	90,774	67.0	2,269,000	618,150	576,723
Louisiana Ry. & Nav. Co.....Aug. 8 mos.	337	302,098	20,841	322,939	44,491	44,491	13,483	73.5	278,447	68,188	27,892
Louisiana Ry. & Nav. Co.....Aug. 8 mos.	337	2,093,259	19,978	2,113,237	379,236	379,236	92,639	55.2	1,734,001	171,515	5,957
Louisiana Ry. & Nav. Co. of Tex.....Aug. 8 mos.	206	89,376	6,733	96,109	15,886	15,886	5,937	108.9	80,223	15,115	23,602
Louisiana Ry. & Nav. Co. of Tex.....Aug. 8 mos.	206	751,841	47,811	799,652	160,445	131,788	24,953	90.6	639,107	47,882	106,005

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents	Net after taxes, 1925
		Freight	Passenger	Total	Traffic	Trans- portation	General					
New York, Chicago & St. Louis	1,691	\$4,362,155	\$206,321	\$4,568,476	\$126,147	\$1,532,628	\$162,172	73.2	\$1,264,347	\$998,073	\$839,836	\$887,334
N. Y., New Haven & Hartford	1,918	5,766,932	4,431,687	10,198,619	86,376	3,827,364	317,838	72.7	3,105,845	2,649,052	2,063,297	2,014,528
Central New England	271	644,771	2,995	647,766	629,667	30,547,623	2,428,168	74.3	22,608,442	18,991,259	14,806,842	14,407,717
New York Connecting	278	4,900,408	28,409	4,928,817	53,978	1,668,648	134,960	71.9	1,395,970	1,185,964	883,984	1,024,006
New York	20	218,209	.....	218,209	.....	54,926	1,380	43.5	1,043,008	98,160	95,390	110,919
New York, Ontario & Western	569	916,545	713,326	1,629,871	16,167	555,111	31,635	58.6	768,138	714,896	636,769	602,874
Norfolk & Western	2,241	5,899,767	2,128,907	8,028,674	110,099	3,244,109	272,248	74.9	2,855,270	1,981,727	1,542,464	1,463,635
Norfolk Southern	931	676,332	91,484	767,816	119,793	2,528,747	200,343	73.0	4,552,044	3,551,443	3,185,208	3,170,061
Northern Pacific	6,682	7,060,399	1,212,035	8,272,434	864,659	19,429,495	1,511,301	60.6	30,032,268	23,448,142	25,485,268	18,340,592
Northwestern Pacific	477	507,200	206,815	714,015	24,433	300,534	29,323	71.5	230,926	173,101	143,076	117,924
Pennsylvania R. R.	10,317	43,312,111	13,528,574	56,840,685	189,499	2,448,972	226,215	70.2	1,971,392	1,557,063	1,224,142	837,866
Baltimore, Chesapeake & Atlantic	130	93,826	69,655	163,481	16,845	86,302	2,975	75.4	15,082,439	9,343,016	12,167,248	8,886,486
Long Island	397	1,007,083	2,784,351	3,791,434	1,711,410	21,139,558	1,925,872	59.2	316,769	276,105	255,496	243,698
West Jersey Seashore	378	437,398	1,162,449	1,600,000	8,806	249,587	18,271	71.5	1,349,098	1,020,868	923,330	678,265
Peoria & Pekin Union	19	22,806	1,619	24,425	7,983	485,140	65,070	72.3	99,593,385	76,723,976	66,396,440	59,898,782
Pere Marquette	2,248	3,545,492	453,220	3,998,712	2,845	86,302	2,975	74.2	44,312	27,240	28,481	46,291
Pittsburgh & Shawmut	102	1,052,408	2,791	1,055,200	16,845	624,532	26,707	112.6	1,182,229	1,602,292	1,627,799	1,480,797
Pittsburgh & West Virginia	92	411,216	4,905	416,121	31,880	583,428	36,575	72.5	7,220,608	5,638,427	3,862,178	5,023,506
Pittsburgh, Shawmut & Northern	210	1,232,060	23,555	1,255,615	147,559	3,824,840	220,401	79.7	610,621	287,820	242,692	415,379
Quincy, Omaha & Kansas City	249	71,226	12,745	83,971	7,928	77,651	19,376	63.2	1,479,452	1,265,578	1,107,807	986,856
Reading Company	1,138	54,123,965	6,337,708	60,461,673	57,212	1,282,823	92,981	65.4	8,745,415	7,123,005	6,082,955	4,765,966
Atlantic City	161	137,419	604,942	742,361	439,726	10,399,521	94,364	73.2	294,506	38,739	40,487	14,678
Perkinston	41	129,329	6,429	135,758	1,274	38,455	6,164	77.3	249,506	247,862	332,503	147,733
Port Reading	19	117,307	.....	117,307	7,028	77,651	19,376	50.3	224,266	156,982	276,738	209,974
Richmond, Fitchburg & Fitchburg	117	4,187,452	3,178,480	7,365,932	6,822	271,808	20,691	83.4	15,329	10,380	6,884	31,098
Rutland	413	353,887	122,457	476,344	9,337	213,214	12,848	110.5	648,892	518,223	13,282	208,065
St. Louis-San Francisco	4,986	6,106,022	1,413,469	7,519,491	81,383	1,739,775	106,803	65.1	3,110,933	2,487,145	2,062,999	2,208,730
Ft. Worth & Rio Grande	233	78,943	18,353	97,296	9,537	213,214	12,848	74.7	160,382	120,082	124,505	113,841
St. Louis, San Francisco & Texas	137	1,148,405	92,277	1,240,682	115,475	2,334,998	239,138	82.3	792,123	553,922	624,762	495,180
St. Louis Southwestern	940	1,317,822	132,937	1,450,759	896,273	19,345,248	1,957,098	66.1	2,727,202	1,553,112	2,233,365	2,074,655
St. Louis Southwestern of Texas	807	3,803,368	468,250	4,271,618	197,232	1,959,422	261,119	65.2	17,806,962	14,596,922	14,619,561	13,789,087

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1926—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents	Net after rents, 1925
		Freight	Passenger	Total (inc. misc.)	Way and structures	Traffic	Trans- portation					
San Antonio, Uvalde & Gulf.....Aug.	318	\$133,616	\$21,472	\$155,088	\$33,133	\$4,062	\$61,948	75.3	\$11,641	\$37,848	\$19,259	\$22,154
San Antonio, Uvalde & Gulf.....8 mos.	318	1,021,506	171,238	1,192,744	233,346	29,066	436,724	70.5	378,228	289,132	130,761	130,761
Seaboard Air Line.....Aug.	3,928	3,234,843	836,824	4,071,667	720,107	192,677	1,861,067	74.0	1,314,824	1,023,862	985,701	978,853
Seaboard Air Line.....8 mos.	3,928	26,738,378	8,747,334	35,485,712	5,895,377	1,591,308	16,761,070	74.1	11,671,761	9,345,128	7,418,270	6,657,845
Southern Ry. ....Aug.	6,797	9,481,950	2,861,182	12,343,132	1,882,371	267,949	4,181,672	68.1	4,242,034	3,555,289	2,888,387	3,325,580
Southern Ry. ....8 mos.	6,794	73,879,017	20,611,569	94,490,586	14,534,326	2,024,324	34,467,963	70.6	30,120,058	23,483,605	22,145,891	20,656,970
Alabama Great Southern.....Aug.	318	644,586	196,399	840,985	140,146	22,517	256,868	71.6	263,131	195,061	226,927	244,758
Alabama Great Southern.....8 mos.	318	5,228,931	1,323,183	6,552,114	1,029,666	170,103	2,115,474	71.6	2,022,548	1,537,573	1,679,647	1,668,197
Cin., New Orleans & Tex. Pacific.....Aug.	338	1,695,370	370,340	2,065,710	317,740	42,283	575,300	64.3	775,057	437,286	591,061	644,235
Cin., New Orleans & Tex. Pacific.....8 mos.	338	11,817,575	2,924,501	14,742,076	2,226,664	345,207	4,360,444	66.9	5,183,494	4,196,571	4,139,109	4,481,231
Georgia Southern & Florida.....Aug.	401	350,204	146,038	496,242	111,424	15,677	195,558	80.0	105,386	80,583	67,469	153,268
Georgia Southern & Florida.....8 mos.	401	3,193,938	1,289,143	4,483,081	724,070	139,781	1,826,777	74.1	1,242,990	989,598	652,639	901,071
New Orleans & Northeastern.....Aug.	207	375,943	92,611	468,554	59,135	10,528	148,259	67.2	165,014	96,862	75,463	111,808
New Orleans & Northeastern.....8 mos.	207	3,171,556	653,110	3,824,666	539,135	1,945	37,496	59.1	1,466,225	985,386	738,180	841,537
Northern Alabama.....Aug.	110	866,759	69,679	936,438	188,677	17,030	311,054	60.6	377,842	328,926	126,142	174,720
Northern Alabama.....8 mos.	110	7,375,943	1,323,183	8,699,126	1,029,666	170,103	2,115,474	60.6	3,778,426	3,289,926	1,261,421	1,747,279
Southern Pacific.....Aug.	8,791	13,931,096	3,971,728	17,902,824	2,524,692	374,835	6,034,738	63.7	7,165,849	5,560,452	5,203,721	4,759,610
Southern Pacific.....8 mos.	8,759	96,171,957	28,288,596	124,460,553	20,643,000	2,815,628	45,348,949	70.8	40,512,323	29,151,188	27,068,923	21,132,354
Atlantic Steamship Lines.....Aug.	...	6,620,082	378,302	6,998,384	1,332,044	127,846	5,111,241	86.2	1,131,976	1,055,478	1,061,621	456,176
Atlantic Steamship Lines.....8 mos.	...	52,058,602	2,971,728	55,030,330	8,699,126	1,029,666	21,154,744	75.4	6,622,243	5,881,136	498,875	440,268
Galveston, Harrisburg & S. Antonio.....Aug.	191	1,664,735	292,421	1,957,156	364,892	32,654	582,019	70.8	601,512	478,275	372,739	402,202
Houston & Texas Central.....Aug.	207	1,664,735	292,421	1,957,156	364,892	32,654	582,019	70.8	601,512	478,275	372,739	402,202
Houston & Texas Central.....8 mos.	207	13,931,096	3,971,728	17,902,824	2,524,692	374,835	6,034,738	77.3	68,765	317,008	275,035	315,508
Louisiana Western.....Aug.	207	1,664,735	292,421	1,957,156	364,892	32,654	582,019	70.8	601,512	478,275	372,739	402,202
Louisiana Western.....8 mos.	207	13,931,096	3,971,728	17,902,824	2,524,692	374,835	6,034,738	77.3	68,765	317,008	275,035	315,508
Morgan's L. & T. R. & S. Co. Aug.	400	437,771	136,696	574,467	127,015	12,675	24,804	98.8	7,734	46,865	46,933	5,613
Morgan's L. & T. R. & S. Co. Aug.	400	3,648,781	1,034,906	4,683,687	1,286,237	190,813	258,252	104.5	298,496	640,827	774,402	388,235
Texas & New Orleans.....Aug.	557	5,090,422	1,171,193	6,261,615	1,258,984	130,488	2,462,978	84.2	1,055,978	776,105	493,523	956,152
Texas & New Orleans.....8 mos.	557	41,513,637	9,885,994	51,399,631	10,535,266	1,153,753	22,744,343	55.2	3,077,295	320,053	286,038	180,934
Spokane, Portland & Seattle.....Aug.	354	667,365	150,637	818,002	863,232	747,334	1,574,384	64.5	1,926,403	1,308,706	1,224,610	825,263
Spokane, Portland & Seattle.....8 mos.	354	5,401,906	1,250,637	6,652,543	1,053,526	115,384	15,743,843	70.2	84,767	75,610	54,292	51,464
Tennessee Central.....Aug.	296	2,015,985	31,495	2,047,480	49,982	8,261	90,708	79.7	439,361	386,189	199,595	269,495
Tennessee Central.....8 mos.	296	18,068,868	288,100	18,356,968	450,045	62,613	771,927	79.7	3,215,770	2,323,535	3,122,454	2,571,233
Terminal Railroad Ass'n of St. L. Aug.	55	.....	.....	.....	1,145,756	184,966	93,455	62.1	434,414	316,713	512,590	371,908
Terminal Railroad Ass'n of St. L. Aug.	55	.....	.....	.....	8,828,401	1,283,594	749,747	63.6	3,215,770	2,323,535	3,122,454	2,571,233
Toledo, Feoria & Western.....Aug.	248	111,967	13,429	125,396	32,084	20,859	58,320	89.4	14,476	6,776	921	561
Toledo, Feoria & Western.....8 mos.	248	711,680	148,545	860,225	193,425	184,111	494,397	104.8	44,735	104,341	137,087	184,046
Trinity & Brazos Valley.....Aug.	367	249,214	11,472	260,686	76,506	4,503	110,307	96.8	8,671	799	23,815	76,150
Trinity & Brazos Valley.....8 mos.	367	1,452,063	70,829	1,522,892	441,513	310,682	722,648	101.9	29,738	91,965	282,096	393,759
Ulster & Delaware.....Aug.	128	54,052	96,856	150,908	182,767	27,619	45,949	69.0	56,693	50,943	42,702	57,132
Union Railroad of Penna.....Aug.	45	.....	.....	.....	1,135,084	97,070	328,144	76.6	265,510	225,510	303,586	354,395
Union Railroad of Penna.....8 mos.	45	8,620,421	1,655,373	10,275,794	1,805,138	1,405	3,478,019	77.3	1,843,101	1,537,694	2,046,981	1,793,458
Union Pacific.....Aug.	3,690	52,065,490	10,922,958	62,988,448	9,375,108	1,457,552	18,939,149	62.6	20,587,616	15,043,514	13,564,216	13,353,656
Union Pacific.....8 mos.	3,690	426,230	494,347	920,577	4,204,366	410,071	424,955	64.0	1,260,876	1,014,708	902,928	304,895
Oregon Short Line.....Aug.	2,537	2,768,230	3,046,581	5,814,811	4,204,366	410,071	424,955	71.9	5,987,716	3,943,329	3,384,422	1,978,420
Oregon Short Line.....8 mos.	2,537	18,145,534	3,046,581	21,192,115	3,203,588	444,991	3,558,666	61.9	11,221,215	1,035,815	894,376	426,470
Oregon, Wash. R. R. & Nav. Co. Aug.	2,237	2,555,650	402,033	2,957,683	444,991	3,558,666	72,491	77.4	4,304,003	2,991,013	2,154,423	632,968
Oregon, Wash. R. R. & Nav. Co. Aug.	2,237	15,044,067	2,689,608	17,733,675	3,567,741	2,971,697	6,023,339	70.4	624,562	492,816	390,030	387,376
Los Angeles & Salt Lake.....Aug.	1,208	1,336,841	534,844	1,871,685	338,332	69,570	599,220	80.6	3,135,474	2,072,726	1,329,725	1,463,435
Los Angeles & Salt Lake.....8 mos.	1,207	11,192,827	3,402,922	14,595,749	3,567,741	576,820	4,988,116	81.0	60,264	46,132	28,704	95,704
St. Joseph & Grand Island.....Aug.	258	276,887	16,018	292,905	90,459	3,151	79,823	76.9	536,472	383,969	263,470	236,313
St. Joseph & Grand Island.....8 mos.	258	2,039,627	131,773	2,171,400	488,572	24,485	1,184,966	76.9	36,715	27,322	25,957	39,146
Utah.....Aug.	111	138,917	56	139,473	36,590	3,103	28,727	73.7	36,715	27,322	25,957	39,146
Utah.....8 mos.	111	1,057,314	1,058	1,058,372	165,484	3,103	28,727	73.7	36,715	27,322	25,957	39,146
Virginian.....Aug.	545	2,037,966	62,842	2,100,808	193,809	12,865	472,769	45.7	1,280,010	1,151,994	1,223,090	596,316
Virginian.....8 mos.	545	13,070,314	465,502	13,535,816	1,711,515	82,422	3,127,031	53.5	6,686,553	5,632,082	6,266,203	3,646,523
Wabash.....Aug.	2,534	5,134,387	898,075	6,032,462	1,086,596	157,246	2,149,629	72.3	1,790,416	1,492,091	1,282,459	1,175,258
Wabash.....8 mos.	2,534	37,059,187	6,169,466	43,228,653	6,024,863	1,238,492	3,375,952	68.5	7,201,956	6,066,956	5,564,989	5,782,793
Western Maryland.....Aug.	804	2,082,266	61,498	2,143,764	1,918,551	296,742	4,302,127	69.8	4,533,856	3,878,856	3,582,276	3,063,128
Western Maryland.....8 mos.	804	14,110,273	394,144	14,504,417	1,918,551	2,143,764	3,375,952	69.8	5,613,338	4,419,561	515,611	533,822
Western Pacific.....Aug.	1,042	1,235,405	247,700	1,483,105	1,548,909	307,598	3,238,733	71.7	2,617,466	1,785,681	2,465,125	2,114,694
Western Pacific.....8 mos.	1,042	7,930,686	1,345,545	9,276,231	1,692,956	2,095,956	3,238,733	67.2	646,031	483,454	497,611	439,164
Wheeling & Lake Erie.....Aug.	511	1,786,266	43,312	1,829,578	321,528	408,054	1,079,721	70.6	4,040,858	2,899,915	2,917,280	2,678,698
Wheeling & Lake Erie.....8 mos.	511	12,621,138	310,104	12,931,242	1,907,021	2,555,735	3,967,464	70.6	4,040,858	2,899,915	2,917,280	2,678,698

General News Department

(Continued from page 855)

entitled to special consideration in making promotions. Tests are to be applied to nominees for legion honors by officers of the company, who, themselves, are not eligible for membership; and only those who made a distinct contribution to the success of the company will receive the award."

Threatens to Chain Cars to Track

Colonel Ira L. Reeves, deputy prohibition administrator of New Jersey, following seizure by his men of a car of alcohol and two cars of beer at Camden, N. J., says that if contraband shipments continue, he proposes to seize both cars and locomotives. He is quoted as saying: "It is my intention to libel the freight cars, and the locomotive that draws them as well. I propose to arrest the engineer and the train crew and if necessary padlock the cars to the siding where they are seized. I believe the railroads to a certain extent know the shipments are being made. The freight agents should know what the cars contain. If they do and permit the shipments, they are parties to the crime."

Northern Pacific Protests High Taxes

The Northern Pacific on October 19 filed a suit in the federal court at Spokane, Wash., against 23 counties of the state to restrain these counties from issuing, selling or foreclosing certificates or delinquencies against the railroad for \$783,615 of unpaid taxes of 1925 and 1926. The railroad also asked that the taxes be stricken from the tax rolls and liens be removed as it is a cloud on the plaintiff's proper and clear title to the property. The railroad charges that its properties in the 23 counties have been wrongfully taxed for these two years, the counties having assessed the railroad properties at a rate of 66.01 per cent of the market value as compared with the taxation of all other property on no more than 35 per cent of the market value. For these two years mentioned in the suit the railroad has paid only such taxes as it deemed was due the counties and the sum of \$783,615 is the balance which the counties claim is still due them.

Chicago New Station Plans

After 26 months of continuous study, 12 comprehensive plans for the consolidation of the Dearborn, LaSalle and Grand Central passenger stations in Chicago have been placed in the hands of chief executives of the 13 railroads involved. These plans, which are expected to cover the freight as well as the passenger terminal needs of these railroads for the next 75 years, are embodied in three separate terminal types worked out in detail for each of four locations.

Engineers in charge of the study recommend to the executives the adoption of the loop terminal with station platforms located at the end of the loop as opposed to the stub end terminal and to the loop terminal with platforms located at the beginning of the loop. All plans prepared give consideration to possible electrification of the station.

The cost of the station building and accompanying facilities, not including the cost of land to be acquired, is estimated at \$120,000,000. Electrification of tracks from such a terminal (from the proposed locations, either immediately north or south of Polk street) to Eighteenth street would involve an expenditure of about \$26,000,000 more, while electrification to a point as far as Fifty-First street would cost \$10,000,000 additional. Construction of such a terminal must await the completion of the Chicago river straightening project from Polk to Sixteenth streets.

Eastern Trainmen's Wage Hearing Opens

Hearing before the arbitration board on the request of approximately 80,000 conductors and trainmen employed on eastern railroads for an increase in wages amounting to about 20 per cent was begun in New York, October 28. Edgar E. Clark, of Washington, as chairman of the arbitrating body, opened the hearing with a brief statement as to the course of procedure, saying that the conductors and trainmen would be heard first. L. E. Sheppard, president of the Order of Railway Conductors,

made the first statement to this board composed of two railroad representatives, two labor representatives, and two representatives of the public. Mr. Clark and W. D. Baldwin of the Otis Elevator Company, are the public's members; D. L. Cease, editor, the Railroad Trainman, and E. P. Curtis, general secretary, Brotherhood of Railroad Trainmen, are the labor members; and Robert V. Massey, assistant vice-president, personnel, eastern region, the Pennsylvania, and W. A. Baldwin, vice-president of the Erie, are members for the railroads.

Mr. Sheppard, speaking for the conductors, made a brief resumé of the case up to date, pointing out that the men were in need of increases in pay and that the carriers had refused to grant them. He described the importance of the class of employees who were seeking the increase and pointed out that there had been before, and probably would be in this case, beneficial results to both parties following an increase in wages.

The trainmen were represented at the hearing by W. G. Lee, president, and W. N. Doak, vice-president of the national organization. The railroads were represented by the conference committee of managers, of which J. G. Walber, vice-president, personnel, the New York Central, is chairman.

A.S.M.E. Annual Meeting

The annual meeting of the American Society of Mechanical Engineers will be held at the Engineering Societies' building, 29 West Thirty-ninth street, New York, December 6 to 9, inclusive. The regular council meeting and conference of local sections delegates will be held on Monday, December 6. The various sectional meetings will be held on the succeeding days, the following tentative program having been arranged:

TUESDAY, DECEMBER 7

- 9:30 a. m.—Industrial Power Division.
Textile Division.
Wood Industries Division.
Power Test Code Public Hearing.
- 2:00 p. m.—Fuels—Smoke Abatement.
Railroad Division.
Joint Session with A. S. R. E. Program Arranged by Sub-Committee on Heat Transmission, of N. R. C.
General (I).
- 4:30 p. m.—Robert Henry Thurston Lecture.
Evening—Presidential Address and Reception; John Fritz Medal Award to Dr. Elmer A. Sperry.

WEDNESDAY, DECEMBER 8

- 9:30 a. m.—Fuels—By-Product Processing of Coal.
Machine Shop Practice Division (I) Jointly with Research Sub-Committee on Cutting and Forming of Metals.
Material Handling Division.
General (II).
- 2:00 p. m.—Business meeting and General Session.
- 3:00 p. m.—Education and Training for the Industries.
Student Branch Conference.
Steam Tables Research.
- 3:30 p. m.—Ladies' Tea.
Evening—Annual Dinner.

THURSDAY, DECEMBER 9

- 9:30 a. m.—Central Station Power Division.
Management Division (I).
Machine Shop Practice Division (II).
Aeronautic Division.
- 2:00 p. m.—Management Division (II), Jointly with Taylor Society.
Oil and Gas Power Division.
Springs—Open Session of Special Research Committee on Mechanical Springs.
Petroleum Division.
Power—Jointly with Research Sub-Committee on Boiler Feedwater Studies.
- 4:30 p. m.—Henry Robinson Towne Lecture.
Evening—College Reunions.

At the railroad session at 2 p. m. Tuesday, papers will be read on The Use of High Pressure Steam in Locomotives, by E. C. Schmidt, professor railway engineering department, University of Illinois, Urbana, Ill., and J. M. Snodgrass, professor railway mechanical engineering, University of Illinois, and on Balancing

Factors in Use and Obligations Covering Ownership of Freight Train Cars, by L. K. Sillcox, general superintendent motive power, Chicago, Milwaukee & St. Paul, Chicago. Also at the second management session at two o'clock Thursday afternoon, a paper on Railroad Organization will be presented by J. C. Clark, of the staff of Industrial Relations Counsellors, Inc.

Railway Business Association Annual Meeting

The business session of the annual meeting of the Railway Business Association to be held in connection with the annual dinner at the Hotel Commodore, New York, on November 18, will be featured by a forum on "Railway Progress and the Future of the Supply Industry" which will be discussed under three topics, namely, "Railway Attitude Toward Progress and Quality," "Policy of Railways Towards Prices" and "Concentration of Railways Upon Transportation."

The full program of the annual meeting follows:

10 a. m. First business session.
Reports of officers and standing committees.

FORUM

"The Railway Supply Industry and Future Railway Progress," Roy V. Wright, managing editor of the *Railway Age*, whose paper will be read by C. B. Peck, associate editor.

"Problems of the Railway Supply Industry," conference report from the general executive committee, to be read by Alexander Turner, president Bronze Metal Company.

"Railway Attitude Toward Progress and Quality," A. C. Moore, vice-president of the Chicago Railway Equipment Company.

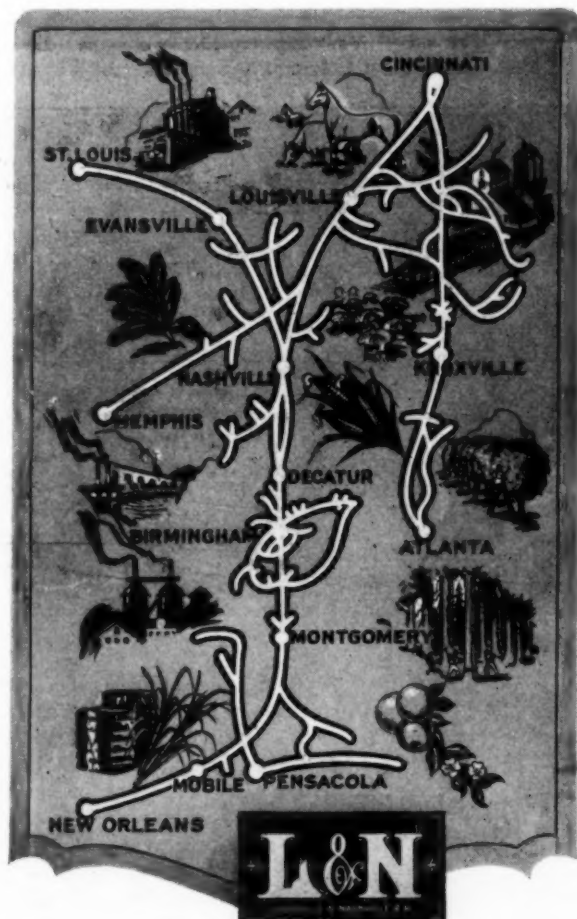
"Policy of Railways Towards Prices," A. H. Mulliken, president of Pettibone-Mulliken Company.

"Concentration of Railways Upon Transportation," general discussion.

1 p. m. Second business session.
Reports of convention committees.
Election of officers.

7 p. m. Annual dinner, President Johnson presiding.
Dr. John L. Davis, identified in the program as a "Revivalist to the Hope-sick."

Whiteford R. Cole, president, Louisville & Nashville.
Simeon D. Fess, United States Senator from Ohio.



A Map Used by the L. & N. for Advertising Purposes

Traffic News

The Chicago Shippers' Conference Association will hold its annual meeting and luncheon at the Hotel LaSalle, Chicago, on November 2. Dr. Max Mason, president of the University of Chicago, will address the meeting.

The Grand Trunk launched its new car ferry, the Grand Rapids, on October 23 at Manitowoc, Wis. This new boat, which has an overall length of 360 ft. and a beam of 56 ft., will be run between Milwaukee, Wis., and Grand Haven, Mich.

General W. W. Atterbury, president of the Pennsylvania; W. J. L. Banham and Donald D. Conn are announced as among the speakers to be heard at the meeting of the Allegheny Shippers' Advisory Board, at the Schenley Hotel, Pittsburgh, Pa., on Wednesday, November 3.

Horace Baker, former member of the United States Labor Board, has been appointed general manager of trains for the Florida Exposition, the organization which proposes next December to send elaborate exhibits by special trains to various cities, throughout the country, advertising the resources and the beauties of Florida.

Through an agreement between the National Railways of Mexico and the connecting railways of the United States, at the border, through freight service into Mexico will be inaugurated on November 1. Under a new rule promulgated by the Mexican customs department, carload shipments will not be detained at the port of entry for inspections, but they will be inspected at destination.

The Domestic Packing Advisory Board of the United States Department of Commerce, at a meeting in Chicago on October 18, approved the educational bulletins describing the best methods of packing freight for transportation which had been drawn up by the manufacturers of boxes and crates with the assistance of transportation agencies represented on the board. The bulletins will be published by the Department of Commerce on or before January 1.

The Houston (Texas) Chamber of Commerce will ask the Interstate Commerce Commission to postpone from November 8 the date for filing exceptions to the recommendations of Examiner Koch in the Texas-New Orleans rate case. The Chamber of Commerce feels that since Texas ports are deeply involved in other matters pending before the commission and traffic officers are engaged in other litigation, it will be impossible for them to prepare their exceptions by November 8.

The semi-annual meeting of the Associated Traffic Clubs of America will be held at Milwaukee, Wis., on October 26 and 27. The subjects to be considered at the business session on the afternoon of October 26 and the whole of October 27 will include the Hoch-Smith Resolution; the regulation of motor vehicle carriers; the transportation legislation desired of Congress; the simplification of tariffs; and the co-operation between traffic clubs and regional advisory boards. Other business to be considered will include the reports of the president, secretary, treasurer and committees and the proposed change in the constitution relative to maximum dues.

The peculiar needs of the farmer at the present time, because of the low price of cotton, are the subject of the latest circular of J. J. Pelley, president of the Central of Georgia. Mr. Pelley calls attention to the organization of the agricultural department of the road 15 years ago, and to the consistent and highly profitable efforts of that department during these 15 years in giving varied assistance to the farmers of Alabama and Georgia. The test pastures, established by the railroad during the past few years, have proved the feasibility of grazing an average of more than one animal to the acre, thus assuring low cost of producing beef, milk and pork. The agricultural department is manned by six specialists, all of whom are at the call of interested farmers at any time. The general agricultural agent is J. F. Jackson, Savannah, Ga.

Faster California Passenger Schedules

The improved passenger service between Chicago and California, as heretofore announced, will go into effect on November 14. The Chicago & North Western in conjunction with the Union Pacific and the Southern Pacific; the Atchison, Topeka & Santa Fe; and the Chicago, Rock Island & Pacific in conjunction with the Southern Pacific have all made their announcements of the 63-hour schedule.

The Overland Limited to San Francisco over the North Western, the Union Pacific and the Southern Pacific and the Los Angeles Limited to Los Angeles over the North Western and the Union Pacific, now 68-hour trains, will be extra-fare trains under the 63-hour schedule. These three railroads will add a 68-hour standard fare train between Chicago and San Francisco to be known as the Gold Coast Limited. These trains will leave Chicago daily at 8:10 p. m., 8:00 p. m., and 8:30 p. m., respectively, arriving at San Francisco, Los Angeles and San Francisco on the third day at 9:10 a. m., 9:00 a. m., and 2:30 p. m. Eastbound, the 63-hour trains will leave Los Angeles at 5:50 p. m. and San Francisco at 6:00 p. m., arriving in Chicago at 10:50 a. m. and 11:00 a. m., on the third day, while sections of the Gold Coast Limited will leave Los Angeles and San Francisco at 11 a. m., reaching Chicago at 9:00 a. m. on the third day. The time of the Continental Limited from Chicago to Los Angeles over the North Western and the Union Pacific has been reduced from 72 to 68 hours.

The Santa Fe will operate "The Chief" on a 63-hour schedule leaving Chicago at 8 p. m., and arriving in Los Angeles at 9 a. m., on the third day. Eastbound the train will leave Los Angeles at 6 p. m., arriving in Chicago at 11 a. m., on the third day. The Golden State Limited of the Rock Island and the Southern Pacific, an extra-fare train on a 63-hour schedule, will leave Chicago at 8:30 p. m., arriving in Los Angeles at 9:30 a. m., on the third day. Eastward it will leave Los Angeles at 5 p. m., and arrive in Chicago at 10 a. m.

Each of these trains will be made up entirely of sleeping cars with club, observation and dining cars. Barber, valet, maid, shower bath and manicure service will be provided on all trains.

Canadian Rate Decision Expected Soon

Since June, 1925, as has been noted from time to time in these columns, the Board of Railway Commissioners of Canada has been engaged in investigating the freight rate structure of the country. At that time the federal government by order-in-council instructed the board to deal with freight rates in general and with several individual rates of outstanding importance in particular.

The decision of the board has been expected for some time, and on October 20, H. A. McKeown, the board's chairman, made an announcement in which he declared that the final public hearing would take place within a few weeks, and that the commission would issue its decision almost immediately afterwards.

The chief problems which will be attacked, if not solved, are the question of granting lower rates on wheat and flour moving eastward from Winnipeg over the National Transcontinental (C. N. R.)—the most northerly of Canada's transcontinental lines—to Quebec City. The grain growers of the prairies and the port authorities of Quebec, Nova Scotia and New Brunswick have made common cause to obtain a freight rate on grain which will bring wheat overland to the Canadian seaboard instead of going to American ports via Buffalo. Last year, it is asserted, the railroads of the United States secured more than \$20,000,000 from this traffic—handling by far the larger part of the Canadian exportable surplus of wheat. It is the demand of the Canadian growers and their allies in the eastern seaboard provinces that the freight rate overland be brought below the lake and rail rate from Fort William to New York via Buffalo. The demand has been sturdily resisted by the Canadian railway companies who publicly confessed to be afraid of the consequences should a low rate be authorized.

The Canadian National, which operates the Grand Trunk, has taken the position publicly that United States railways which would suffer by a rerouting of the wheat traffic, would cut rates to a point where the Grand Trunk would become a tremendous financial burden. Other vital matters to be dealt with by the board are freight rates across the Rocky mountains. Here too the railways stand to suffer if the demands before the commission for radical reductions are granted.

Special Tariff Rate Accorded Queen's Party

A special rate of \$28 was made by the railroads for the transportation of Queen Marie of Roumania and her party in a special train from New York to Vancouver and return to Washington, on the basis of \$1 for each movement over a single railroad. This was according to a tariff filed with the Interstate Commerce Commission on October 19, effective on October 21. The tariff



Wide World

H. M. the Queen of Roumania, the Princess Ileana, and Prince Nicholas Leaving Jersey City on Their Special Train

was filed by the Baltimore & Ohio on behalf of itself and nine other roads that participated in the movement. Special permission to file the special tariff on one day's notice instead of the customary 30 days' notice was issued by the commission on October 16. The other roads participating were the Chicago, Burlington & Quincy; the Colorado & Southern; the Cleveland,



Underwood & Underwood

Daniel Willard, President of the B. & O.; Col. J. H. Carrol, Howard Elliott, Chairman of the N. P., and W. V. Shipley, Assistant General Passenger Agent of the B. & O. After an Inspection of Queen Marie's Special Train at Jersey City Terminal of the Central of New Jersey

Cincinnati, Chicago & St. Louis; the Great Northern; the Illinois Central; the New York Central; the Northern Pacific; the Pere Marquette, and the Spokane, Portland & Seattle. The tariff filed in this case is similar to those filed in 1921 when Marshal Foch of France and party were the guests of the American

Legion in this country; also last year in the case of the president of Cuba and party, and on some other occasions in the past when distinguished persons have been entertained in this country. The amount of money received by each railroad system apparently depends, according to these tariffs, on the number of separate operating companies in its line. Under the Foch tariff the rate for a day's movement sometimes ran up to \$5 for a single day's ride. No announcement has been made as to who paid the \$28 for the transportation of Queen Marie's party.

It is understood that the queen was accorded free transportation across the ocean in the premier suite of the "Leviathan," which is owned by the government's Fleet Corporation.

How to Pack Eggs

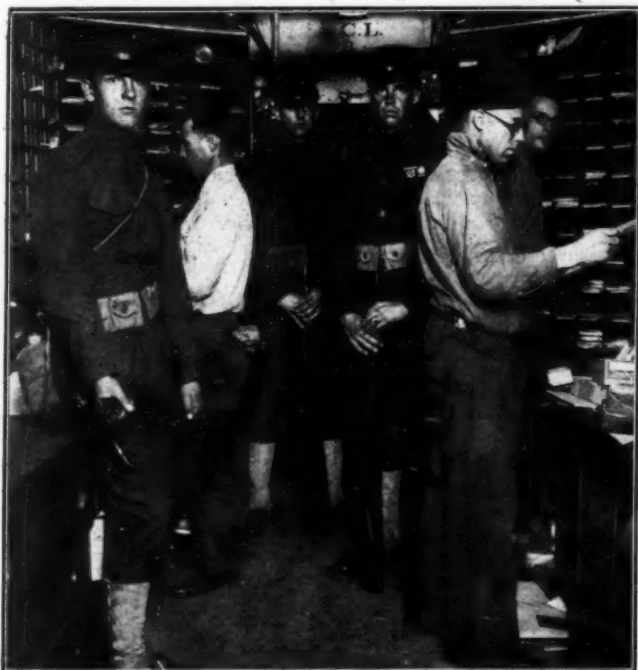
"Methods of Packing Eggs and of Buffing and Bracing Cases of Eggs in Carload Shipments" is the title of Circular 391, which has been issued by the United States Department of Agriculture; a 15-page pamphlet containing a report, by R. R. Slocum, of a series of tests which were made last year to throw light on the best means of preventing breakage of eggs in transit. These tests, made under the direction of a committee representing shippers, manufacturers and railroad interests, covered six shipments, each consisting of two cars, sent over different roads in the east and the west. The eggs and the facilities of plants were furnished by Swift & Company, and certain supplies were furnished by manufacturers.

Motor Transport News

B. & O. to Extend Motor Coach Service to Brooklyn

The Baltimore & Ohio will open a new passenger terminal in Brooklyn, N. Y., about the middle of November. The new station will be on the ground floor of the Central Building on Joralemon street near Court street, in the heart of the business district. From this station the company will operate to and from all trains motor coach service directly alongside of trains in Jersey City, similar to that which has been in operation in Manhattan since August 29.

At the Brooklyn station there will be a ticket office and facilities for the convenience and comfort of passengers, including the checking of hand baggage so that passengers will be relieved of care of same until it is delivered to them in the train at Jersey City terminal.



Harris & Ewing

Marines on Duty in a Railway Mail Car

Commission and Court News

State Commissions

The request of North Dakota railroads for a rehearing in the state mill and elevator case was denied on October 20 by the North Dakota Board of Railroad Commissioners. In the case in question the board granted to the state mill and elevator at Grand Forks, N. D., certain transit and other privileges which the railroads contended were unwarranted.

North Dakota Board to Investigate Rates

The North Dakota Board of Railroad Commissioners on October 20 at Bismarck, N. D., started an investigation into the rates, charges, rules, regulations and practices of railroads doing business in the state, but postponed further action until November 18 when representatives of railroads asked for more time in which to prepare to defend the rates already in existence, and others on which they have asked increases. The investigation is intended to give the state board data for readjusting alleged inequalities in rates on various materials to and from different points. In the investigation two cases will be considered. One is the investigation into the general freight rates structure of all roads excepting the Midland Continental and the Chicago & North Western. The former is excluded because it is a Class C railroad and the latter because it has only two stations in the state. The second case involves an application by the Northern Pacific and the Minneapolis, St. Paul & Sault Ste. Marie for authority to meet the rates of the Great Northern from Fargo, N. D., to Minot, without making such rates the maximum to intermediate points.

Court News

Eminent Domain—Part of Property in Bed of River

The Louisiana Supreme Court holds in a railroad's proceeding to expropriate a square of ground in New Orleans between the levee and the Mississippi, that the fact that a portion of the square was in the bed of the river, and therefore not subject to private ownership, did not give the alleged owner of the square a right to complain.—Texas & Pacific-Missouri Pacific Terminal v. W. G. Coyle & Co. (La.), 106 So. 571.

Negligence Not Shown When

Sledge Hammer Misses Chisel

The Texas Court of Civil Appeals holds that a railroad was not liable where a shop employee, holding a chisel, moved it slightly, so that another failed to hit it with a sledge hammer, which struck a third employee, the first two employees not being "guilty of a lack of ordinary care for others while doing their work."—Lancaster v. Taylor (Tex. Civ. App.), 281 S. W. 654.

Waybills Accepted by Court As Evidence

J. C. Caviston, secretary of the Protective Section of the American Railway Association, reporting a discussion at the last meeting of the section, gives references to two decisions of the United States Court in Ohio, in which, passing on suits arising in connection with thefts of freight, the court accepted waybills as prima facie evidence.

The cases were No. 4498, Toledo, June, 1925, against Louis Kruse and others; and case No. 4958 in the same court, March, 1926, against Matthew Howe and Walter Jacobs. The paragraph from the syllabus reads, "that to establish the interstate or foreign commerce character of any shipment in any prosecution under this act, the waybill of such shipment will be prima facie evidence of the places from which and to which such shipment was made."

Foreign Railway News

New Railway Commission for Rhodesia

A railway commission composed of three members and a chairman, one member from Northern Rhodesia, one from the Bechuanaland Protectorate, and one from Southern Rhodesia, the chairman to be appointed by the three governments jointly, will regulate the railways of Rhodesia under a new agreement made between the Colonial Office, the British South Africa Company, and the Rhodesian government in order that the roads may be administered as a single system. Each of the governments concerned, under the agreement, will take steps to pass legislation providing that all railway charges shall be subject to the approval of the railway commission, and that such charges shall be so fixed that the annual net railway revenue, together with other sources of revenue of the railway company, will, in the view of the commission, yield the amount to provide for interest on present debentures, loans, and such fixed charges as may be agreed upon; for such allowances as shall be necessary adequately to remunerate any additional capital required; for a sum of £150,000 to be available for distribution to shareholders and to be known as a dividend provision; and for a sum of £350,000 to be put into reserve until it has accumulated to the amount of £1,000,000, when the sum to be budgeted shall be reduced to £150,000 annually until the accumulation has reached £1,500,000, when the provision with regard to this item will cease. Under the agreement it was determined that in any year when the income shall exceed the amount required, 10 per cent of the excess shall be available for dividends. In any year in which the railway income shall be less than the amount required, the deficiency shall be apportioned between the sum available for distribution to shareholders and the sum to be put into reserve, in the proportion which the dividend provision bears to the reserve provision for that year.

The year commencing October 1, 1927, shall be the first, it was decided, in which the new railway commission shall become operative. The governments have agreed upon a policy to bring into force a general code of railway legislation providing for public safety, methods of operation, railway facilities and accommodations.

Northern of Spain Purchases Central Aragon

The Central of Aragon has been purchased by the Northern, in Spain, according to the Railway Gazette correspondent in that country. While the sale is a private deal, the purchase price is understood to have been approximately 57 millions of pesetas, or at the present rate of exchange, £1,780,000. Considerable interest in the sale has taken place in railway circles, since it is the first move of any re-grouping under the new railway regimen, and said to be free from any government influence or pressure. The Central Aragon is owned by Belgian interests, and is one of the most prosperous railroads in Spain, in fact, the only railway of importance which has been able to operate under the railway law of 1924 without any financial aid or increase in rates. The line, nearly all single track, runs from the port of Valencia into the center of Aragon, for a distance of about 300 kilometers (186 miles). Its earnings are approximately £30 per week. The purchase price is about £9,600 per mile, but this includes certain subsidiary assets. The value of the railroad is better understood by the fact that the Central Aragon dividends which averaged 5 per cent for many years, increased to 6, 7, 8 and 10 per cent in the last four years on both common and preferred stocks. It is believed that, due to the sale, the Northern will now construct a line from Calatayud to Castejon, which will give a practically direct line from the Mediterranean to the north, since the Central Aragon is constructed on the same normal Spanish broad gage of 5 ft. 6 in., the same as that of the Northern.

A Royal Order which was issued on September 1, 1926, requires that passes for Spanish railways be issued to include all the principal departmental heads of the civil service, most of the public works officials, and all the principal functionaries of the provincial offices of works. When the Military Directory

assumed control of the Spanish government, it abolished the extensive pass system, which had grown into an abuse, since passes were granted to all government and local officials. This order, however, was almost immediately modified to grant free transportation to certain officials whose duties involved railroad travel, and in a few months there were almost as many passes in circulation than before the Directory order. It now appears that the railways will be forced to issue a far greater number of passes than they voluntarily granted, prior to the reform law passed by the so-called New Railway Regimen, instituted by the Military Directory.

Indian Railways Exchange Trackage

By agreement with the secretary of state of Great Britain, according to the Railway Gazette (London), the South Indian has taken over the operation of the broad gage section of the former Madras Railway from Jalarpet to Mangalore on the west coast, and certain standard gage and narrow gage connections, totaling approximately 573 miles in all. In exchange, the South Indian has surrendered to the new Madras & Southern Mahratta, its northern standard-gage branches from Katpadi to Gudur, and from Pakala to Dharmavaram, approximately 264 miles, and has secured permission to operate over the Madras broad gage lines from between Madras, Jalarpet, and Bangalore. By this exchange the South Indian has become a more compact system, with 900 miles of standard gage, 446 miles of broad gage and 98½ miles of narrow gage, which are all operated for the Indian government. Added to 431¾ miles of railway which it operates for other owners, the total mileage now operated by the South Indian is 1,876¼ miles.

Gross receipts of the South Indian for the fiscal year ended March 25, 1926, increased, but net earnings were lower, due to increased operating expenses. Passengers handled and receipts were higher in all classes.

Netherlands East Indies State Railway

Returns Show Increase in 1925

Receipts for 1925 from all sources of the Netherlands East Indies increased, over 1924, despite the adoption of a higher wage scale at the first of the year, according to Consul Charles L. Hoover, Batavia, Java. Gross revenue was 74,592,883 florins in 1925, or about 4,600,000 florins more than in 1924, when the gross revenue was 69,997,455 florins. (The florin in 1925 had an average exchange value of \$0.4016.) Revenue from passenger traffic showed an increase for the first time since 1921, reaching 24,533,641 florins, as against 24,087,883 florins in 1924. The net income for the State Railways for the year, after deductions for renewals, repairs, depreciation and retirement funds were made, amounted to 21,637,589 florins; the net revenue for 1924 was 18,211,126 florins. Ordinary operating expenses for 1925 were 47,281,710 florins, and in 1924, were 45,702,250 florins.

The increase in operating expenses was due largely to an increase in the wage scale which the government adopted in February, 1925, and to changes and improvements which made operation more expensive. Revenue from ordinary freight was considerably above that of 1924. The increase occurred mostly in Java, the receipts in the outer possessions having advanced only from 5,979,301 florins in 1924, to 6,013,632 florins in 1925. The increase in Java is laid to the completion and construction of several new lines into the rice country east of Batavia, where the harvest in the spring of 1925 was especially good. Revenue from the mountain districts remained about stationary. At the end of 1925 there were 4,138 kilometers (about 2,571 miles) of railways in the Netherlands East Indies. Of these, 2,857 kilometers (about 1,775 miles) were on the island of Java, 1,234 kilometers (about 766 miles) in Sumatra, and 47 kilometers (about 29 miles) in the Celebes.

Little construction took place in 1925. Preparations were made to build a line in east Java and another in the Preanger regencies, but the actual construction work was held up pending the appropriation of funds by the government. In Sumatra, work on the unfinished section of the Palembang-Telok-Betong line is being pushed steadily. In 1925, a 33 kilometer (about 20 miles) line between Bateerdja and Martapoera was opened for freight traffic in June, and general traffic in November. A line between Tjempaka and Negararatoe, 21 kilometers in length (about 13 miles), was also opened for freight traffic during the year.

Equipment and Supplies

Locomotives

THE NORFOLK & WESTERN will build 30 additional 16,000 gal. locomotive tenders in its Roanoke shops.

THE STATE PURCHASING DEPARTMENT OF SACRAMENTO, CAL., has ordered one 0-4-0 type tank locomotive from the American Locomotive Company. This locomotive is to have 12-in. by 20-in. cylinders and a total weight in working order of 65,000 lb.

THE LONG ISLAND has ordered two 100-ton oil-electric switching locomotives from the Ingersoll-Rand Company, the General Electric Company and the American Locomotive Company. These companies co-operate in the manufacture of these locomotives.

THE SINGER MANUFACTURING COMPANY has ordered one Prairie type locomotive from the American Locomotive Company, Montreal Works, for service on the Thurso & Nation Valley Railway in Canada. This locomotive will have 17-in. by 24-in. cylinders and a total weight in working order of 126,000 lb.

THE NEW YORK CENTRAL has ordered 8 single track snow plows having wing elevators and flangers together with cast steel side frames and bolsters; 4 right hand double track snow plows having wing elevators and flangers with cast steel side frame and bolsters and 2 double track snow plows with wing elevators and flangers for either right or left hand running, with cast steel side frame and bolsters, from the Russell Car & Snow Plow Company, Ridgway, Pa.

Freight Cars

THE CHICAGO, INDIANAPOLIS & LOUISVILLE is inquiring for six caboose cars.

THE CARNEGIE STEEL COMPANY is inquiring for 8 hopper cars of 75 tons' capacity for carrying ore.

THE NEW YORK CENTRAL is inquiring for 60 automatic steel dump cars of 30-cu. yd. and 50 tons' capacity.

THE DELAWARE & HUDSON has ordered ten 30-yard extension side dump cars, from the Clark Car Company.

THE STANDARD SLAG COMPANY has ordered seven 30-yard extension side dump cars, from the Clark Car Company.

THE ASSOCIATED OIL COMPANY, San Francisco, Cal., has ordered one 30-yard extension side dump car, from the Clark Car Company.

THE CHICAGO & BLOOMINGTON STONE COMPANY, Bloomington, Ind., has ordered one 30-yard extension side dump car, from the Clark Car Company.

THE AMERICAN STEEL & WIRE COMPANY has given an order to the Clark Car Company for rebuilding and modernizing 40 of its extension side dump cars.

THE LOUISVILLE & NASHVILLE has ordered 250 automobile cars and 250 flat cars from the Tennessee Coal, Iron & Railroad Company, instead of 200 of each type as reported in the *Railway Age* of October 23.

THE NORFOLK SOUTHERN has given an order for 100 composite gondola cars of 50 tons' capacity to the Virginia Bridge & Iron Company. This contract is subject to the approval of the board of directors. Inquiry for this equipment was reported in the *Railway Age* of October 2.

THE NEW YORK RAPID TRANSIT CORPORATION has ordered 2 steel box cars and 10 steel flat cars from the Pressed Steel Car Company and a motor supply car from the Differential Car Company. Inquiry for this equipment was reported in the *Railway Age* of August 21 under the name of the Brooklyn-Manhattan Transit Company.

Passenger Cars

THE CHICAGO & NORTH WESTERN is inquiring for eight 70-ft. baggage cars.

THE CITY OF PHILADELPHIA, PA., has given a contract to the J. G. Brill Company for furnishing and delivering 150 steel passenger cars and car trucks, six extra motor trucks and four extra trailer trucks, for the Broad street subway. Inquiry for this equipment was reported in the *Railway Age* of July 24.

Iron and Steel

THE READING COMPANY has divided an order for 36,000 tons of rail between the Bethlehem Steel Company and the Carnegie Steel Company; practically all of the rail will be of 130-lb. section.

Machinery and Tools

THE NORFOLK & WESTERN is inquiring for a large number of machine tools for its 1927 requirements.

Miscellaneous

THE SOUTHERN PACIFIC has given contracts to the Bethlehem Shipbuilding Corporation for three new steel ferryboats. These boats have a capacity for 95 cars each and will be used for transbay transportation of automobiles at San Francisco, Cal. Inquiry for this equipment was reported in the *Railway Age* of July 3. The Southern Pacific has also ordered two new steel ferryboats from the Moore Drydock Company, Oakland, and one from the General Engineering & Drydock Company, San Francisco.

Signaling

THE CHICAGO, AURORA & ELGIN has installed a Union electro-pneumatic interlocking, 11 levers, at Bellwood Junction, Ill.

THE PANHANDLE & SANTA FE has ordered from the General Railway Signal Company an electric interlocking, 54 working levers, for Amarillo, Texas.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company an interlocking machine for Black Run, Pa.; eight mechanical levers and ten electric.

THE SEABOARD AIR LINE has ordered from the Union Switch & Signal Company two electric interlockings for Miami, Fla., both for crossings with the Florida East Coast.

THE CHICAGO RAPID TRANSIT COMPANY has completed the installation of a Union electro-pneumatic interlocking plant at Gunderson Avenue, Chicago, 11 working levers.

THE READING has ordered from the Union Switch & Signal Company a mechanical interlocking for Snyderstown, Pa.; seven working levers; also one with six working levers for Pottsgrove, Pa.

THE CHESAPEAKE & OHIO has ordered from the Union Switch & Signal Company, intermittent inductive train stop apparatus for 26 locomotives which run over the tracks of the New York, Chicago & St. Louis between Stony Island, Ill., and Hammond, Ind.

THE NEW YORK CENTRAL has ordered from the General Railway Signal Company an electric interlocking for Stanley Tower, Toledo, Ohio, 110 working levers; also 30 relays and other material to be sent to Elkhart, Ind.; and 124 color-light signals and other material for Ashtabula, Ohio.

THE LONG ISLAND has contracted with the Union Switch & Signal Company for the installation of automatic block signals on its Long Beach Line, between Lynbrook and Long Beach, N. Y., six miles. The contract includes two mechanical interlockings. The block signals are color-light, style R.

Supply Trade News

The Ohio Brass Company, Mansfield, Ohio, is constructing a five-story steel and brick office building, 52 ft. by 255 ft., to cost \$500,000.

Alfred J. Forschner has been appointed representative of the McMyler Interstate Company, with headquarters at Philadelphia, Pa.

Allen, Sproull & Allen, Fort Worth, Tex., manufacturers' representative, will in future represent the Bridgeport Brass Company, Bridgeport, Conn., in the southwest.

S. H. Worrell, district sales manager of the Detroit Seamless Steel Tubes Company, with headquarters at Detroit, Mich., has been promoted to general manager of sales.

Lee & Clark, 549 Washington boulevard, Chicago, Ill., have been appointed representatives in the Chicago district of the Pennsylvania Pump & Compressor Company, Easton, Pa.

The Pyle-National Company, Chicago, has awarded a general contract to C. Rasmussen for the construction of a one-story foundry addition 25 ft. by 160 ft. to cost \$50,000, with equipment.

M. A. Blessing, assistant manager of sales of the Jones & Laughlin Steel Corporation, with headquarters at Chicago, has been appointed district manager of sales, with the same headquarters.

The Positive Lock Washer Company, Newark, N. J., originator of Positive type lock washers has appointed the Lundie Engineering Corporation of New York and Chicago, as its exclusive railroad sales agents for the United States and Canada.

Howard A. Gray, general manager of sales of the Ulster Iron Works at Chicago, has resigned. Henry T. Bradley, formerly eastern sales manager, has succeeded him, with headquarters at the company's New York office, 52 Vanderbilt avenue.

The Globe Railway Equipment Company, St. Louis, Mo., has placed a contract with the Larkin Engineering Company, St. Louis, for the construction of two concrete, brick and steel buildings at Veedersburg, Ind. One building will be one story 60 ft. by 150 ft., and the other will be two stories, 60 ft. by 200 ft.

Norman C. Naylor, sales agent of the Railway Steel Spring Company, with headquarters in the Peoples Gas building, Chicago, has been appointed district sales manager of both the American Locomotive Company and the Railway Steel Spring Company, with headquarters in the McCormick building, Chicago, effective November 1.

L. E. Porter, treasurer of S. F. Bowser & Company, Ft. Wayne, Ind., has been elected vice-president in charge of industrial sales. T. D. Kingsley, assistant general manager, has been elected vice-president in charge of commercial sales and D. C. Milligan, director of foreign sales, has been elected vice-president in charge of foreign sales.

F. J. Holzhauser, representative of the Square D Company, with headquarters at Columbus, Ohio, has been appointed branch sales manager, with headquarters at Cincinnati, Ohio. W. D. Clark, representative at Cincinnati, Ohio, has been transferred to the Pittsburgh, Pa., office. The Milwaukee office of the Square D Company has been moved to room 913, First Wisconsin National Bank building.

James B. Sipe & Co., Pittsburgh, Pa., manufacturers of Japan oils and paints for railroads, recently placed a con-

tract with the Austin Company, New York, for a two-story addition, 60 ft. by 180 ft., to their plant at Bridgeville, Pa. They have appointed the following district managers of the railroad and car department: A. W. Fields, 640 Equitable building, St. Louis, Mo.; G. W. Lindholm, 125 West Forty-sixth place, Chicago; John H. McCartney, 165 Broadway, New York City. D. B. Vail, who has represented the company for fifteen years, continues as manager of the railroad and car department.

G. C. Barry has been appointed assistant to E. G. Hines, general sales manager of the American Brown Boveri Electric Corporation, New York. Mr. Barry began his electrical career with the Western Electric Company in 1912. Three years later he became associated with the Hart Manufacturing Company, Hartford, remaining until the outbreak of the war. In 1923, he returned to the Hart Company as sales manager of the company with office in New York, and was shortly after appointed general sales manager at Hartford, during which connection he personally established several branch offices of the company in Europe.

Gerald Firth, for the past eight years works manager of the Firth-Sterling Steel Company, McKeesport, Pa., has been appointed general manager. He was born on December 16, 1886, at Sheffield, England and was educated at Uppingham School and at Trinity College, Cambridge. His ancestors have been connected with the steel business since 1842 in England and 1855 in the United States. The Firth-Sterling Steel Company was organized in 1896 at McKeesport, Pa., to manufacture fine steel products including high grade tool steel. In February, 1910, Gerald Firth went to the Firth-Sterling Steel Company and was engaged in investigating the requirements of the business in the United States; later he took up the study of tool and die steel at the Sheffield works of Thos. Firth & Sons, Ltd. In addition to his experience in the crucible and other departments at Sheffield he worked at the bench for nearly two years and obtained a thorough and practical knowledge of different types of defects, fractures and workmanship of finished high speed and tool steel bars. In 1914 he returned to the Firth-Sterling Steel Company and made both stainless steel and stainless iron. When the World War started it put an end to his work and in August, 1914 he went to England and obtained a commission as lieutenant in the Field Artillery the following month and joined the 14th Light division then training at Aldershot, later serving in France. In September, 1915 he was recalled to England by the army authorities and after spending some time visiting British arsenals and ammunition factories went to the United States to assist in the manufacture of large orders placed by the British Government with the Washington Steel & Ordnance Company, Washington, D. C. His headquarters were in New York. In July, 1916 he returned to France to join the Thirty-second division which was engaged in the battle of the Somme. In April, 1917 while acting as captain on artillery observation near St. Quentin, he was wounded in the knee by fragments of a shell. Amputation was necessary and he was invalided to England where he spent some time in the military hospital in Southampton. In May, 1918 he returned to the works of the Firth-Sterling Steel Company at McKeesport, Pa., as works manager and after filling that position for eight years, was elected general manager of the company.



L. Gerald Firth

Railway Construction

ALASKA ANTHRACITE.—Bondholders who purchased this railroad at a foreclosure sale on October 9, are reported to have announced that they will rehabilitate the present line, 22 miles long, extending from Katalla on Controller Bay, Alaska, to a temporary terminal on the Bering river and complete construction eastward to the Bering River coal fields. Rehabilitation and construction costs have been estimated at \$1,000,000.

ATCHISON, TOPEKA & SANTA FE.—Bids will close on November 3 for the construction of a brick and concrete combined freight and passenger station, 26 ft. by 290., at Abilene, Kan.

ATLANTIC COAST LINE.—Company forces are constructing a bridge over the Waccamaw river at Conway, S. C.

ATLANTIC COAST LINE.—A contract has been awarded to the Roberts & Schaefer Company, Chicago, for the construction of a multiple pit standard "N. & W." type electric cinder plant at Thomasville, Ga., and for the construction of two single track junior "N. & W." type electric cinder plants at Chatmar yard, Dunnellon, Fla.

CENTRAL OF GEORGIA.—A contract has been let to the Roberts & Schaefer Company, Chicago, for the installation of a junior "N. & W." type electric cinder plant at Savannah, Ga.

CANADIAN NATIONAL.—This company contemplates the construction of a steel and concrete bridge across the Thompson river at Third avenue, Kamloops, B. C., estimated to cost \$400,000.

CHICAGO, MILWAUKEE & ST. PAUL.—The Federal court has authorized expenditures for a water treating plant at Mobridge, S. D., to cost \$21,000, and for a water treating plant at Bristol, S. D.

CHICAGO, ROCK ISLAND & PACIFIC.—A contract has been let to the Roberts & Schaefer Company, Chicago, for the construction of a "N. & W." type junior cinder handling plant at Goodland, Kan.

GREAT NORTHERN.—This company has been ordered by the Minnesota Railroad & Warehouse Commission to construct a steel and concrete highway subway under its line near Coon Creek, Minn., at a cost, to be borne equally by the county and railroad, of \$18,800.

GULF & SHIP ISLAND.—Bids closed October 27 for the construction of a 200 ton coaling station at Mendenhall, Miss.

MISSOURI PACIFIC.—A contract has been awarded to T. H. Johnson, Sedalia, Mo., for the construction of a 5-stall brick and concrete addition to the enginehouse at Nevada, Mo., estimated to cost about \$25,000.

NEW YORK, CHICAGO & ST. LOUIS.—A contract has been awarded to the Austin Company, Chicago, for the construction of a one-story machine shop, 115 ft. by 80 ft., at Frankfort, Ind., estimated to cost \$75,000.

PENNSYLVANIA.—A contract has been let to the Walsh Construction Company, Davenport, Iowa, for the construction of a cut-off from St. Jacob, Ill., to Collinsville, 10.5 miles. The contract, which includes grading, masonry construction, ballasting and track laying, will involve an expenditure of about \$325,000.

SAN ANTONIO & ARANSAS PASS.—This company has applied to the Interstate Commerce Commission for authority to build an extension from Harlingen to Brownsville, Tex., 30 miles.

UNION PACIFIC.—A contract has been awarded to the Allied Contractors, Denver, Colo., for the construction of the substructure of a highway subway on Thirty-eighth street between Walnut and Wynkoop streets, Denver, consisting of two 18-ft. roadways and a 7-ft. sidewalk. The structural steel has been ordered from A. M. Castle, Chicago.

YAZOO & MISSISSIPPI VALLEY.—Bids are being received until November 1 for the construction of a 500 ton coaling station at Lambert, Miss.

Railway Financial News

BALTIMORE & OHIO.—*Control of Dayton & Union.*—The Interstate Commerce Commission has approved the acquisition of control of the Dayton & Union under an operating contract. This company operates from Union City, Ind., to Dodson, Ohio, 31.94 miles, and goes into Dayton by means of trackage rights over the Pennsylvania.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*Equipment Trust.*—The issue of \$410,000 equipment trust certificates, series C, which this road planned to sell to Kuhn, Loeb & Co., at par, but which the Interstate Commerce Commission required the road to sell to the highest of competitive bidders at not less than par, will not be sold at this time. The commission, in its order issued with regard to the sale of these certificates, said that they might be sold without competitive bidding at 100.83.

DELAWARE & HUDSON.—*Segregation of Properties.*—Stockholders at a special meeting held in New York on October 29 extended authority to the board of managers to transfer to a separate corporation the company's transportation and allied interests, the stock of the separate corporations to be held in the present company's treasury. Last year the stockholders granted authority for the segregation of the coal property. The purpose of the present procedure was explained by President L. F. Loree as follows:

"If an offer had been received for the coal properties, which carried terms satisfactory to the board, the sale would have been made. A year ago the stockholders gave the board authority to sell the coal lands of the company. Today the proposition is to give the board similar power to transfer the railroad properties of the company.

"The officers and directors have been at work on plans for segregating the one class of property from the other, but no plan has been matured. The object of this meeting is to empower that board to dispose of the transportation holdings instead of the coal lands. This will provide an alternate method of segregation."

DETROIT & Ironton.—*Stock.*—The Interstate Commerce Commission has approved the issuance of \$2,972,200 common stock to cover increased cost of construction over the original estimates of the line from Springwells, Mich., to Flat Rock, 15 miles.

ILLINOIS CENTRAL.—*Equipment Trusts.*—The issue of \$4,665,000 equipment trust certificates, series N, paying 4½ per cent, has been sold under competitive bidding to Halsey, Stuart & Co., of Chicago, at a price of 98.815. The only other bid received was that of A. B. Leach & Co., in conjunction with Kountze Brothers, who offered 98.63. The Illinois Central had planned to sell the issue to Kuhn, Loeb & Co. at 98.43 but the Interstate Commerce Commission refused to approve this price without competitive bidding.

KENTUCKY & INDIANA TERMINAL.—*Notes.*—The Interstate Commerce Commission has approved the issuance of six promissory notes of \$30,000 each, payable to the Lima Locomotive Works, Inc., in connection with the purchase of six locomotives. The notes are to mature at six months' intervals over a period of 36 months.

LITCHFIELD & MADISON.—*Trackage Rights.*—The Interstate Commerce Commission has granted a certificate to operate over a line of the North Western from the northern terminus of the Litchfield & Madison to Benld, Ill., 8 miles.

MINNEAPOLIS & ST. LOUIS.—*Receiver's Certificates.*—The Interstate Commerce Commission has granted this company authority to issue \$500,000 receiver's certificates to renew obligations for a like amount maturing in October and November of this year.

MISSOURI PACIFIC.—*Bonds.*—The Interstate Commerce Commission has authorized the authentication and delivery of \$20,345,000 of first and refunding mortgage 5 per cent bonds, to be pledged and repledged, from time to time, as collateral for

short term notes. It has also issued a supplemental order amending an order entered on May 20, 1925, authorizing the authentication and delivery of only \$30,701,500 of first and refunding mortgage 6 per cent bonds, instead of \$35,317,000.

NORFOLK & WESTERN.—Extra Dividend.—Directors have declared an extra dividend of \$3.00 on the common stock in addition to the regular quarterly dividend of \$1.75, both payments to be made on December 18 to stockholders of record on November 30.

PENNSYLVANIA.—Dividend on 7 Per Cent Basis.—Directors on October 27 declared a quarterly dividend of $1\frac{3}{4}$ per cent on the company's \$50 par value capital stock, thereby placing this stock on a 7 per cent annual dividend basis. The dividend is payable November 30 to stockholders of record November 1. The dividend at present is on a 6 per cent annual basis which has been maintained since 1900 except in 1906 when $6\frac{1}{2}$ per cent was paid and in 1907 when 7 per cent was paid and in 1921 and 1922 when adverse conditions following federal control necessitated a reduction in the rate to 4 per cent. The Pennsylvania has outstanding \$500,000,000 of capital stock so that the dividend will amount to \$8,750,000. The increase in the dividend is made possible by recovery in net earnings. Net railway operating income for the first eight months of 1926, totaling \$77,077,662, was 6 million dollars in excess of that for the same period of last year. It approximated the net operating income for the whole year 1924 and was only slightly less than the net operating income for 1923. In 1920, which was the Pennsylvania's worst year the company had a net railway operating deficit of over 50 million dollars.

The Pennsylvania will also be assisted by the extra dividend of 3 per cent declared this week on Norfolk & Western common stock. This Norfolk & Western extra dividend will total over 3 million, about a third of which will accrue to the Pennsylvania through the ownership of 29.6 per cent of the Norfolk & Western common issue.

WATERLOO, CEDAR FALLS & NORTHERN.—Six Months Guaranty.—The Interstate Commerce Commission has issued a final certificate to the Treasury stating the amount of this company's guaranty for the six months of 1920 following the termination of federal control as \$78,927. As the commission had previously certified advance and partial payments amounting to \$85,000 the certificate states that the railroad owes the government \$6,072 on account of the overpayment.

WESTERN NEW YORK & PENNSYLVANIA.—Abandonment.—This company has been authorized by the Interstate Commerce Commission to abandon its Lakeville branch from Tryonville, Pa., to Lincolnville, 7 miles, which branch is operated by the Pennsylvania under a lease.

Average Price of Stocks and Bonds

	Oct. 26	Last Week	Last Year
Average price of 20 representative railway stocks	99.48	97.68	89.06
Average price of 20 representative railway bonds	96.48	95.99	91.71

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates as follows:

Rural Valley.....	\$315,000	1917
Louisville, New Albany & Corydon.....	121,635	1917
Milltown Air Line.....	53,380	1917

Dividends Declared

Cincinnati, Sandusky & Cleveland.—\$1.50, payable November 1 to holders of record October 26.
 Elmira & Williamsport.—Common, \$1.15, payable November 1 to holders of record October 20.
 Georgia, Southern & Florida.—Common, 5 per cent (initial); first and second preferred, $2\frac{1}{2}$ per cent, semi-annually; all payable November 26 to holders of record November 12.
 Illinois Central.—Common, \$1.75, quarterly, payable December 1 to holders of record November 5.
 Norfolk & Western.—Common, \$1.75, quarterly; Common, \$3.00, extra; both payable December 18 to holders of record November 30.

Railway Officers

Executive

Eugene Fox, assistant traffic manager of the Southern Pacific, Pacific lines, with headquarters at El Paso, Tex., has been elected vice-president in charge of traffic of the Western Pacific, with headquarters at San Francisco, Cal., effective November 1.

William G. Besler, president of the Central of New Jersey, has been elected chairman of the board of directors and chairman of the executive committee. **R. B. White**, senior vice-president, succeeds Mr. Besler as president. **C. H. Stein**, assistant to the senior vice-president, has been appointed assistant to the president. **Arthur Hamilton**, freight traffic manager, has been elected vice-president in charge of freight traffic.

George T. Bell, executive assistant to the vice-president in charge of traffic and express of the Canadian National, will retire from active service on November 1. Mr. Bell was born on September 7, 1861, at Montreal, and entered railroad work on September 30, 1878, with the Great Western at London, Ont. He remained with that road in the capacities of clerk, stenographer to the general passenger agent and rate clerk until November, 1882, when he entered the service of the Grand Trunk as chief clerk to the passenger agent at Toronto. He became assistant general passenger agent on April 25, 1892. He became first assistant general passenger and ticket agent at Chicago on August 1, 1899. He was promoted to general passenger and ticket agent at Montreal on May 1, 1900, and held that position until May 1, 1909, when he was appointed assistant passenger traffic manager. He was promoted to passenger traffic manager in 1913, and remained in that position until he was appointed executive assistant to the vice-president of the Canadian National in 1923.

Financial, Legal and Accounting

H. J. Dalton, auditor of disbursements of the Canadian Pacific, with headquarters at Montreal, Que., has been appointed auditor of agencies, with the same headquarters, succeeding **C. J. Black**, retired under the pension rules of the railroad. **W. R. Patterson**, assistant auditor of disbursements, has been promoted to auditor of disbursements, and will be succeeded by **F. J. Kavanagh**, assistant auditor on the Edmonton, Dunvegan & British Columbia (operated by the Canadian Pacific), with headquarters at Edmonton, Alta. **G. J. Roddy**, chief traveling auditor, with headquarters at Montreal, has been appointed assistant auditor of freight and telegraph receipts on the Canadian Pacific, replacing **W. J. Sutcliffe**, retired under pension. Mr. Dalton was born on January 30, 1862, at Warcop, England, and educated at Bishopsgate Upper School, London, entering railway service in November, 1876, with the Railway Clearing House, England. He came to Canada in 1882, serving until 1884 in the office of the city engineer of Winnipeg, Man. In 1887, he became a clerk in the audit office of the Canadian Pacific



H. J. Dalton

and in the next year he was appointed a clerk in the audit office of the Manitoba & North Western (a subsidiary of the Canadian Pacific). After a year as traveling auditor on the Canadian Pacific, he was promoted to chief traveling auditor in 1890, where he remained until 1913, when he was appointed assistant auditor of agencies. In 1921, he was promoted to auditor of disbursements, a position he held until his appointment as auditor of agencies.

Operating

J. B. Briscoe, acting superintendent on the Panhandle division of the Atchison, Topeka & Santa Fe, with headquarters at Wellington, Kan., has been promoted to superintendent, with the same headquarters.

A. C. Shields, assistant general manager on the Denver & Rio Grande Western, with headquarters at Denver, Colo., has had his jurisdiction extended to cover the abolition of the general superintendency, effective November 1.

Thomas M. Flynn, who has been appointed superintendent of the Dakota division of the Northern Pacific, with headquarters at Jamestown, N. D., was born on September 21, 1873, at Champaign, Ill., and after graduation from the Carroll (Iowa) High School entered railway service in March, 1891, with the Chicago & North Western. In October, 1896, he entered the operating department of the Great Northern, serving there and with the same department of the Chicago Great Western until January, 1908, when he was appointed chief clerk to the general superintendent on the Northern Pacific at Livingston, Mont. From May 1909, until February, 1925, Mr. Flynn served as trainmaster when he was promoted to assistant to the general superintendent, with headquarters at St. Paul, Minn. In June, 1926, he was promoted to acting superintendent of the Dakota division which position he held until his further promotion to superintendent.

Traffic

C. K. Duncan has been appointed general agent on the Wisconsin & Michigan, with headquarters at Chicago.

Gibbs Lykes has been appointed general agent on the Chicago & Alton, with headquarters at Houston, Tex.

H. G. Settle has been appointed assistant to the freight traffic manager of the Baltimore & Ohio, with headquarters at Baltimore, Md.

A. L. Weber has been appointed general agent on the Chicago Junction and the Chicago River & Indiana, with headquarters at Chicago.

C. W. Waterman, general agent on the Graysonia, Nashville & Ashdown, with headquarters at Texarkana, Ark., has been promoted to assistant general freight agent, with the same headquarters.

N. R. Des Brisay, assistant general passenger agent on the Canadian Pacific, with headquarters at Winnipeg, Man., has been promoted to general passenger agent, with headquarters at Vancouver, B. C.

J. F. Hennessey, Jr., assistant general freight agent on the Texas lines of the Missouri-Kansas-Texas, with headquarters at Dallas, Tex., has been appointed general freight agent in charge of solicitation, with headquarters at St. Louis, Mo. **Harvey Allen**, assistant general freight agent, with headquarters at St. Louis, has been promoted to general freight agent, with headquarters at Dallas.

John D. Stack, general superintendent on the Denver & Rio Grande Western, with headquarters at Salt Lake City, Utah, has been appointed assistant traffic manager, with the same headquarters, following abolition of general superintendency.

Thomas C. Peck, general passenger agent of the Los Angeles & Salt Lake, with headquarters at Los Angeles,

Cal., who has reached the age of 70 years, will retire under the pension rules of the company on November 1 and will be succeeded by **George R. Bierman**, assistant general passenger agent, on the Union Pacific, with headquarters at Omaha, Neb. Mr. Peck was born on October 14, 1856, at Indianapolis, Ind., and was educated at the Indianapolis high school. He followed this with a course in architecture and engineering in the office of Edwin May, the architect of the Indiana State capitol, which he completed in 1878. In that year he began his railway career in the engineering corps of the Jeffersonville, Madison & Indianapolis (now a part of the Pennsylvania) and in December, 1880, he became a freight clerk on the Cleveland, Columbus, Cincinnati & Indianapolis (now a part of the New York Central) at Indianapolis. From March, 1884, to August, 1886, he acted as city ticket agent for the same railroad and until October, 1888, he was district passenger agent. He was then appointed general traveling agent and general passenger agent of the Ft. Wayne, Cincinnati & Louisville (now a part of the New York, Chicago & St. Louis) and in June, 1890, he became chief clerk in the general passenger department of the Columbus, Hocking Valley & Toledo. From November, 1896, to April, 1901, he served successively as general agent, general passenger agent and assistant general manager of the Los Angeles Terminal and he was then appointed assistant general passenger on the San Pedro, Los Angeles & Salt Lake. In May, 1907, he was promoted to general passenger agent on that road and its successor, the Los Angeles & Salt Lake, a position he held until his retirement.

George R. Bierman, assistant general passenger agent on the Union Pacific, with headquarters at Omaha, Neb., has been promoted to general passenger agent on the Los Angeles & Salt Lake,

with headquarters at Los Angeles, Cal., effective November 1, succeeding **Thomas C. Peck**, who will retire under the pension rules of the company. Mr. Bierman was born in 1887, at Omaha, Neb., and entered railway service in 1903, as an office boy in the general passenger office of the Union Pacific at Omaha. He served in various clerical positions in that office until 1907, when he was promoted to ticket agent in the Omaha city ticket office. In

1913, he was appointed traveling passenger agent, with headquarters at Pittsburgh, Pa., and in September, 1917, he entered military service, remaining overseas as a lieutenant of infantry during the World war. Upon discharge from the army he was appointed agent on the Union Pacific at Cheyenne, Wyo., where he remained until 1920, when he was appointed general agent in the passenger department, with headquarters at Chicago. In 1923, he was promoted to assistant general passenger agent, with headquarters at Omaha, a position he held until his promotion to general passenger agent.

Mechanical

W. H. Keller has been appointed master mechanic of the Louisiana & North West, with headquarters at Homer, La., succeeding **J. T. Simpson**, resigned.

A. T. Darnell, roadmaster on the Gulf, Colorado & Santa Fe, with headquarters at Cleburne, Tex., has been promoted to general track inspector, a newly created position, with headquarters at Galveston, Tex.



G. R. Bierman

Jess K. Morgan, general foreman in the locomotive department of the Chicago, Rock Island & Pacific, with headquarters at Little Rock, Ark., has been promoted to master mechanic, with headquarters at Dalhart, Tex., succeeding **A. Hambleton**, transferred.

Engineering, Maintenance of Way and Signaling

R. M. Stimmel, assistant chemist at the Huntington, W. Va., laboratory of the Chesapeake & Ohio, has been promoted to chemist in charge of water treatment on the Hocking Valley, with headquarters at Columbus, Ohio, succeeding **C. P. Hoover**, resigned.

G. W. Koontz, division engineer on the St. Louis-San Francisco with headquarters at Ft. Worth, Tex., has been transferred to Chaffee, Mo., succeeding **D. E. Gelwix** who has been transferred to Ft. Scott, Kan. Mr. Gelwix succeeds **J. A. Reed, Jr.**, who has resigned. **T. E. Bliss**, assistant engineer with headquarters at Ft. Worth has been promoted to division engineer succeeding Mr. Koontz.

R. W. Barnes, construction engineer on the Louisiana and Texas lines of the Southern Pacific, with headquarters at Houston, Tex., has been promoted to chief engineer, with the same headquarters, succeeding **H. M. Lull**, promoted to assistant to the president. **E. A. Craft**, assistant to the chief engineer, with headquarters at Houston, has been promoted to engineer of maintenance of way, a newly created position, with the same headquarters.

G. P. Williams, assistant engineer maintenance of way of the Long Island, with headquarters at Jamaica, N. Y., has been appointed engineer maintenance of way, with the same headquarters, effective November 1, succeeding **E. M. Weaver**, retired. Mr. Williams was born on October 6, 1877, at Easton, Pa., and was graduated from Lafayette College in 1900. He entered railway service the same year as instrumentman on the Lehigh Valley. From February, 1902, to March, 1905, he was assistant engineer for the Lackawanna Steel Company, and from March, 1905 to January 1, 1906, was transitman on the Long Island. From the latter date until the time of his recent appointment as engineer maintenance of way, Mr. Williams served the Long Island as assistant engineer maintenance of way. Mr. Weaver, who has retired as engineer maintenance of way, was born on April 6, 1859, at Danville, Pa., and entered railway service in September, 1877, and until September, 1892, served as operator and in various capacities in the freight and passenger department of the Pennsylvania. From September, 1892, to 1894, he was with the Union Switch & Signal Company, and from the latter date until 1903, was with the New York Central & Hudson River (now a part of the New York Central), in various positions, including assistant superintendent of signals. From July 1, 1903, to July 20, 1911, he was signal engineer on the Long Island. On the latter date he became engineer maintenance of way, which position he was holding when he retired.

Louis F. Vieillard has been appointed signal engineer of the Long Island, with headquarters at Jamaica, N. Y., effective November 1. Mr. Vieillard, who entered the service of the Long Island in 1906, was born December 23, 1885, at Middletown, Conn., and was educated in the public schools of Woodhaven, N. Y., and Richmond Hill, N. Y., and Pratt

Institute, Brooklyn, N. Y., where he studied industrial, electrical and mechanical engineering. He began service with the Long Island on April 2, 1906, as a signal draftsman and held the position of electrical inspector and thereafter of general signal inspector, in which capacity he was serving at the time of his promotion to signal engineer. He has also been chairman of the engineering sub-committee on train control of the Long Island.

C. J. Geyer, who has been appointed engineer maintenance of way, of the Chesapeake & Ohio, with headquarters at Richmond, Va., to succeed **L. B. Allen**, promoted to assistant to the vice-president, was born on April 6, 1889, in Zanesville, O., and was educated in the public schools of Huntington, W. Va., and at Marshal College, Huntington. He began railroad work in 1906, when in summer vacation he worked on railroad construction for the Chesapeake & Ohio. He continued summer work until 1910 for that road and for the Grand Trunk Pacific. In 1910 he became rodman and in the following three years was instrument man and resident engineer for the Chesapeake & Ohio. From April, 1913, to June, 1914, he was assistant engineer, maintenance department, and from June, 1914, to May, 1918, assistant engineer in charge of field survey, valuation department. From May, 1918, to February, 1924, he served in the capacity of division engineer at Richmond, Va. He was promoted to assistant superintendent, maintenance of way, February, 1924, and held that position up to the time of his promotion to engineer, maintenance of way.

Purchases and Stores

Howard M. Smith, who has been promoted to assistant general storekeeper on the Northern Pacific, with headquarters at St. Paul, Minn., was born on July 11, 1873, at Dover, Minn., and entered railway service in December, 1899, as a stores laborer on the Northern Pacific. The following year he was promoted to clerk in the stores department and later held various clerical positions until December, 1910, when he was promoted to division storekeeper, with headquarters at Staples, Minn. In September, 1912, Mr. Smith was appointed chief clerk to the general storekeeper at St. Paul and in September, 1920, he was made traveling storekeeper, a position he held until his promotion to assistant general storekeeper.

Obituary

William F. Sterley, assistant traffic manager of the Ft. Worth & Denver City, who died on September 21 at his home in Ft. Worth, Tex., was born on January 30, 1859, at Henderson, Minn. He entered railway service in 1880 as a freight trucker on the Texas & Pacific, and shortly afterward was promoted to chief clerk. In June, 1887, he became a clerk on the Ft. Worth & Denver City and from 1890 to 1894, he served as local freight agent when he was promoted to chief clerk in the general freight and passenger departments. In 1899, he was promoted to assistant general freight and passenger agent and in December, 1902, he was again promoted to general freight agent. In 1915, he was appointed general freight and passenger agent and in July, 1926, he was promoted to assistant traffic manager, a position he held until his death.

WALTER S. SMITH has been appointed manager of the Safety division of the Milwaukee Association of Commerce, in place of **F. E. McGuire**, resigned.

THE GRAND JURY of Suffolk County, New York, reporting on the derailment of a passenger train on the Long Island at Calverton, N. Y., on August 13, refused to indict the road, or any employee; but characterized the track foreman, **Antonio Dinizio**, as incompetent, saying that his inspection of the defective switch was "superficial and lacking"; and the company was criticized for employing such a man, because "his appearance and demeanor were obviously of a person of insufficient mental ability and accomplishments to be properly charged with such important duties."



G. P. Williams